







Digitized by the Internet Archive  
in 2024 with funding from  
University of Toronto

<https://archive.org/details/39100321100011>













**Continuity with change**

# CONTINUITY



## PLANNING FOR THE CONSERVATION

**Contributions by**

**Edited by**

**Historical Planning and Research Branch  
Toronto**



# WITH CHANGE



## OF ONTARIO'S MAN-MADE HERITAGE

**Joe Bucovetsky, Paul Campbell, David J. Cuming,  
Mark Fram, Ed McKenna, Marilyn Miller, John Weiler**

**Mark Fram and John Weiler**

**Ontario Ministry of Culture and Recreation  
1981**



Copyright © 1981  
Historical Planning and Research Branch  
Ontario Ministry of Culture and Recreation

All rights reserved. All material in this publication is copyrighted and no part may be reproduced, utilized, or transmitted in any form or by any means, electronic or mechanical, now known or hereafter invented, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the publisher, except by a reviewer who may quote brief passages in connection with a review written for inclusion in a magazine, newspaper, or broadcast.

ISBN 0-7743-6304-5

ISSN 0706-1218

### HERITAGE PLANNING STUDY 7

*Supervision of editorial/book production: D. Skene Melvin*

First edition  
September 1981

Copies available

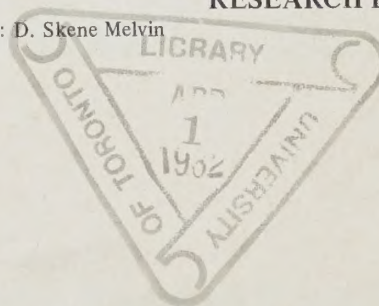
FROM Ontario Government Bookshop  
880 Bay Street at Grosvenor Street  
Toronto

OR Mail Order  
Publications Services  
Ontario Ministry of Government Services  
5th Floor  
880 Bay Street  
Toronto, Ontario  
Canada  
M7A 1N8

PRICE: \$10.00

Payment, payable to: Treasurer of Ontario,  
must accompany mail orders.

**PLEASE DO NOT SEND ORDERS TO THE  
HISTORICAL PLANNING AND  
RESEARCH BRANCH**





# Preface

This book offers seven essays on the surprisingly lively and expanding subject of conserving the man-made heritage of Ontario. Their coherent approach to the topic of heritage conservation planning comes from shared experience and close working relationships in the Historical Planning and Research Branch of the Ministry of Culture and Recreation. It is part of the Branch's mandate to provide information and advice to Ontario Government ministries and agencies, local authorities, and private groups and individuals, toward the goal of conserving the valuable inheritance embodied in works of man in towns, countrysides, and wildlands throughout the province.

In a sense, this book is a progress report on the work of the Branch in heritage conservation planning since the Branch's inception in 1975. The book is aimed at those persons generally interested in the conservation and wise use of our environmental inheritance. More particularly, it is directed at planners, architects, engineers, resource managers, public administrators, and others involved in making decisions about the planning, development, and use of the province's land and building resources.

The research and planning activities reflected in the contributions offered here took place at various times between 1977 and 1980. Many of the issues discussed in this book were the subject of some debate both within and without the Ministry of Culture and Recreation. The attempts to resolve these issues were substantially assisted by exchanging information and ideas with many people too numerous to acknowledge and thank individually. Without their co-operation and help, these essays could not have been written. Nevertheless, the opinions expressed in each contribution remain those of the individual authors, and do not necessarily constitute the policy of the Ministry of Culture and Recreation. We intend that this collection of essays should stimulate further thought and action in the increasingly popular and important fields of conservation and planning, and hope that its audience in Ontario and perhaps beyond will benefit by our experience.

J. Weiler

M. Fram

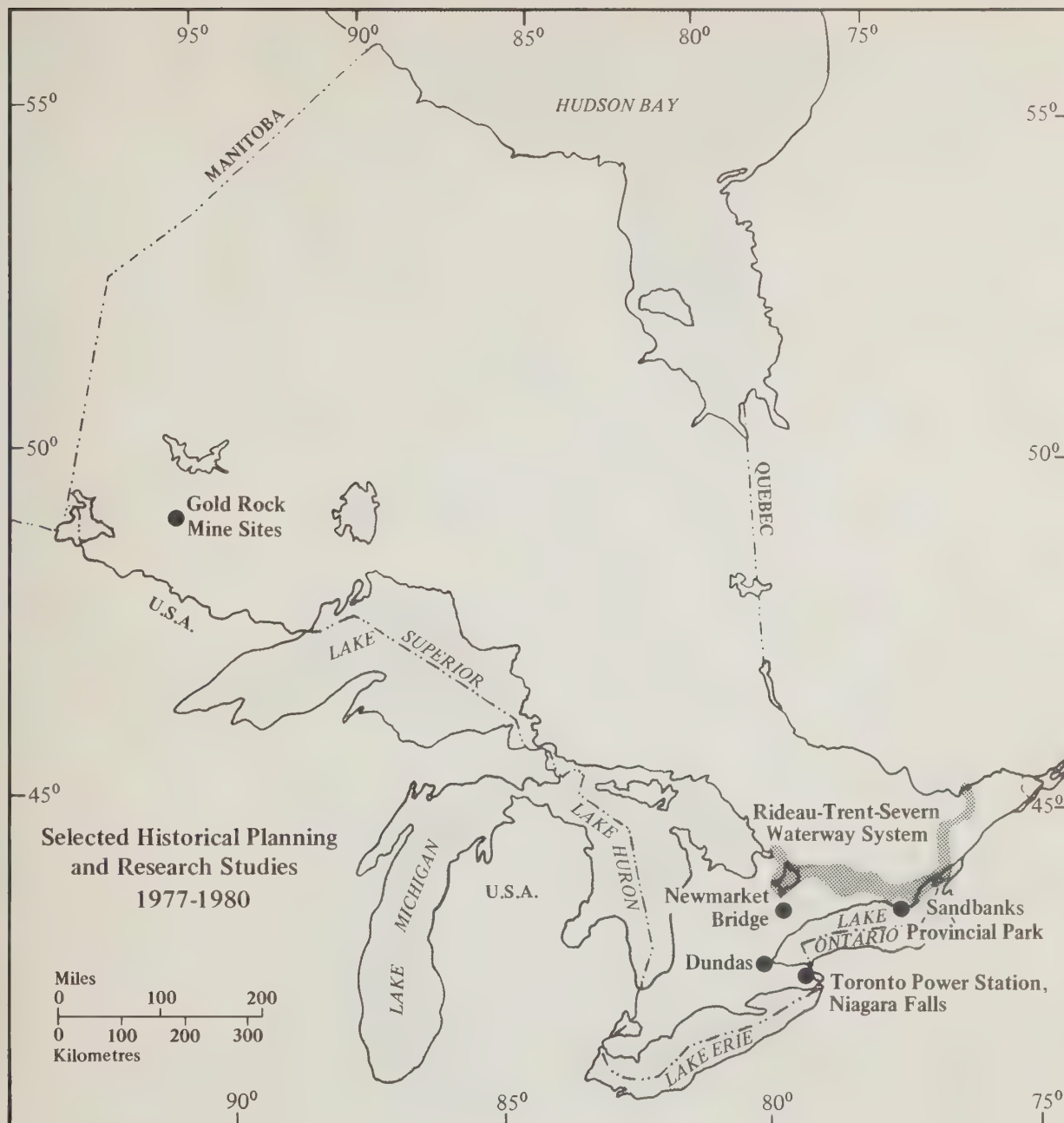




# Contents

Preface	v
Introduction	xi
1. Planning and the conservation of man-made heritage in Ontario <i>John Weiler</i>	1
2. The customary shores: tracing and conserving the material past in its historic and regional contexts on the Rideau, Quinte, Trent, Simcoe and Severn waterways <i>Mark Fram</i>	33
3. The Valley Town: surveying the urban heritage in Dundas <i>Marilyn Miller and Joe Bucovetsky</i>	105
4. Mines and mills at Gold Rock: cultural landscape assessment and heritage conservation in Northwestern Ontario <i>Paul Campbell and David J. Cuming</i>	177
5. Shifting sands: cultural landscapes, provincial parks and the case of Sandbanks <i>Ed McKenna</i>	221
6. Niagara's Falls, Toronto's power: the value and conservation of a monumental hydro-electric generating station <i>Mark Fram</i>	257
7. The forgotten Newmarket Bridge: a case for the importance of historical research in planning <i>Marilyn Miller</i>	323
Contributors	339
Acknowledgements and sources	341



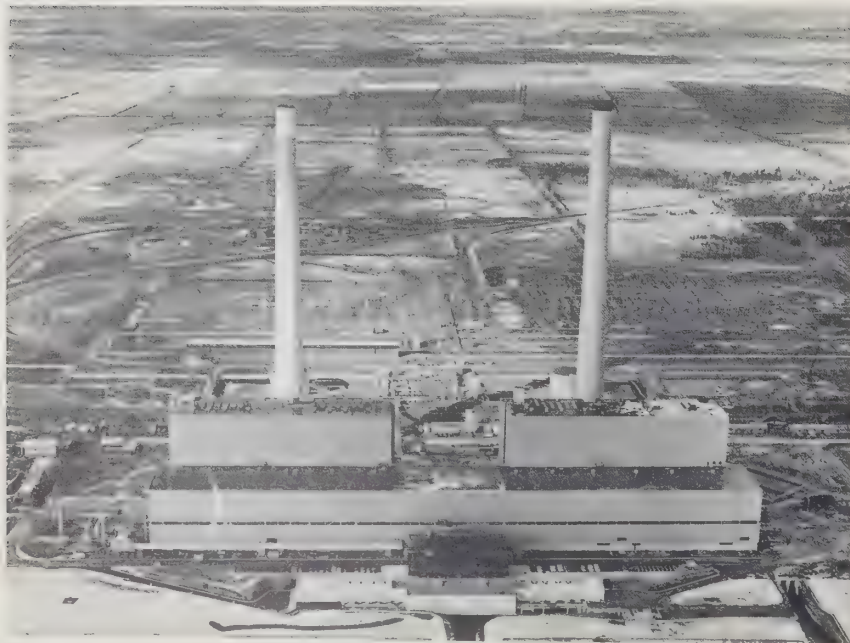




2. The struggle between historicism and modernism in our changing surroundings.



3. The power of technology is far greater now than ever before. This has burdens as well as benefits.



# Introduction

This book is about conserving some of the places made, lived in, and worked in by the generations of people who came before us in Ontario. With a careful and knowledgeable eye, we can see in these places — in buildings, towns, roads, countryside, and wildlands — the traces of the struggles, ambitions, successes, and failures of our predecessors. Each of the contributions in this book tries to show how these traces manifest themselves, and why they are important. And each contribution points to the need for action to conserve those important inheritances, not in the face of change, but in the flow of change.

That we have made continuity and change partners in the title is important. The two have not often been seen together on friendly terms. Indeed, the world has seen many battles between those who wish to maintain tradition, the *status quo*, and those who seek revolution and the remaking of the old order. Our modest struggles to maintain and rehabilitate properties of value to our heritage are not really far away from this most basic conflict. Every generation seems to seek to prove itself better, more advanced, than its predecessors. Some generations do this by reaffirming their history, sometimes building upon it and adapting both its place and its habits to new needs. Other generations establish their ascendancy by denying or transcending their histories and parentage, and by rebuilding or transforming their surroundings in the image of a hoped-for future. The struggle between historicism and modernism is always bitter, and the inevitable compromises are often painful. Yet they have been made. And each day brings new changes.

But in this century we have seen the stakes raised to unforeseen and unparalleled heights. The power of technology is far greater than ever before, and it is well within modern capabilities to completely obliterate what exists and build completely from scratch. But we have found that the costs of this, in terms of money, social disruption, and the physical deterioration of our habitat, are very high. And these high costs are increasingly difficult to bear. While it may seem necessary to continue to exploit our environmental resources so that we might maintain our living standards, it is becoming clear that those resources are not unlimited. They must be husbanded with an eye to the future. Conservation is no longer (was it ever?) the preoccupation solely of a hardy bunch of romantic urban woodsmen or, for that matter, elderly ladies in tennis shoes. Conservation is not a tactic for stopping overall change, although it may legitimately resist individually ill-conceived changes; rather, it is acknowledgement of change, a

strategy for directing change to keep it from causing damage, waste, or loss. Conservation seeks to protect what is of value. We are learning, not without some difficulty, that non-renewable energy is more valuable than we had thought and are beginning to act to conserve energy. We are learning that wetlands harbour forms of life essential to the process of natural survival and renewal in an entire region and are beginning to protect remaining wetlands. We have always known that our agriculture had great value, and we are slowly realizing that we must restrain the insatiable market for urban land from irreversibly consuming our farmlands.

This book is concerned not only with the protection of one of these sometimes undervalued assets of our environment — man's own historic imprint on the land, the constructed record of his achievements — but also with the fitting of man's new works into that environment. The reader will find that the idea of harmony between the old and the new appears directly or indirectly in all of these essays, in the sense of a fitting-well together, a combination of parts into an orderly whole. This sort of harmony is a matter of great value, but its value has proven difficult to measure. In our age, measurement is a primary concern, whether we like it or not. The contributions in this book are attempts to look at the problem of measuring that elusive quality of good fit, if not in econometric terms, then at least in sufficiently strong arguments to persuade the makers of public policy that its value is high enough to merit strong and positive action. In some of the cases that follow, those arguments were sufficiently persuasive, in others not — or at least not yet.

For in each case, the story is not yet complete. Even where the retention of a particular resource is assured, its conservation and maintenance over time as a revitalized asset to the community cannot be considered complete. What we are trying to show most of all is that these valued places cannot be left forgotten and mouldering. They must be cared for, just as we care for the new things and places we make and build. The new does not replace the old; new development is only an insertion into an older fabric. The new always sits next to the old. Environmental change is incremental and slow overall, but its individual steps can be rapid and cataclysmic. Heritage conservation is a strategy for planning, for moderating that pace and healing the raw edges of the new as it meets the old. What that can mean in practice is the subject of the seven essays that make up this book.

In the first contribution we consider some of the fundamentals, the basic principles and practices generally guiding what we call heritage conservation planning. The experience of Ontario in trying to ensure the good fit of new projects into existing environments has many parallels in other jurisdictions, although our legislative instruments and policies are different. It is quite clear that government action to conserve man-made heritage must proceed on many fronts: in the contexts, among others, of municipal planning, statutory assessment of environmental





4, 5. Heritage conservation is not only about protecting historic land and buildings, but also about the fitting of man's new works into that environment in a harmonious way. Two examples of new building in a historic area — one fits well, the other does not.



6. Heritage conservation is a strategy for planning, for moderating the pace of change and healing the raw edges of the new as it meets the old.

7. The transformation of the Rideau-Trent-Severn system from commercial routes to recreational attraction has left its mark on the waterway's towns.



8. For many years, new development followed railways and roads around Dundas and left much of the town as it was from earlier times of growth and dominance in the region.



9. Gold Rock, a heritage resource in a rocky, wild, and relatively inaccessible part of the Canadian Shield in northwestern Ontario.

effects of new projects, development of opportunities for tourism and recreation, planning of public works, encouragement of property maintenance. We cannot pretend that the existing tools for conservation are sufficient to resist the destructive potential of new development. Many of the threats to the valuable resources of man's inheritance come directly from governments themselves. Yet we find room for cautious optimism. Slowly, and in some instances on the basis of work reflected in the case studies included here, the attitude of developers, public and private, large and small, is beginning to see conservation as a positive approach and the man-made heritage of the province as a very valuable asset.

The six case studies in this book present themselves in a descending order of geographic scale from the region down to the local park, and further organize themselves into couplets of contrasting situations.

The development of improved navigation and its eventual supersession by railway and road is an important theme linking the stories of the Rideau-Trent-Severn waterway system and the evolution of Dundas. In both situations, the pressure for change comes from southern Ontario's rapid urbanization and suburbanization. In the case of the Rideau-Trent-Severn system, the waterways still exist, but they have been transformed by time from commercial routes to recreational attractions. This essay focusses on the problem of understanding what of the region's heritage is most valuable when the conventional approaches to inventory and site-by-site analysis are out of the question. Knowing what to look for and how to recognize it when we see it become the most crucial aspects of a regional heritage study like this. Unhappily, the actual planning effort within which this work took place has foundered, and the excerpt from the Branch's work that we show here can do little more than expose the tremendous diversity and richness of the region's heritage and show how our exploration might guide other regional conservation planning ventures.

In the case of Dundas, the waterway story ended long ago. For many years, new development followed railways and roads around Dundas and left much of the town as it was. But with Hamilton's expansion, Dundas has come under the threat of the same rapid and overwhelming urban change as her larger neighbour. The study of Dundas concerns itself on a much smaller scale with the morphology of town and architecture, and with the relations between historical tendencies and building forms produced by those tendencies. It demonstrates in some examples how those relations can best be preserved by making new buildings respond not just to the style and bulk of their older neighbours but also to the pattern of human activities that has gone on in the town for a century and a half.



In Gold Rock and Sandbanks we have similar problems: how can we conserve the traces of economic and social activities of the remote and recent past while developing their respective areas as recreational zones? In both cases the development or expansion of provincial parks served as impetus to the study of the affected man-made heritage. But there the similarity ends, for Gold Rock lies in a rocky, wild, and relatively inaccessible part of the Canadian Shield in northwestern Ontario, and Sandbanks lies in a pastoral, gentle, and heavily-used part of the Lake Ontario shoreline. Gold Rock's mines are relics of a brief but important phase of the province's history of resource exploitation. They were not built to last, nor were they built for spectators, so that their conservation poses both technical and philosophical difficulties. How will it be possible with the surviving material to bring home to visitors the experience of the gold mining process early in this century and its importance to region and province? How will it be possible to conserve what survives from the very pressure of its public display and promotion? Frankly, we do not yet know, for the situation at Gold Rock has not at this writing been resolved.

At Sandbanks, the situation is different. Two heavily-used but ecologically sensitive provincial parks are to be joined together by a zone of farmland and private cottage and lodge development. How will the new public uses be fitted into the existing landscape of fields, woodlots, and lakeshore, without compromising the new uses or the old landscape? Indeed, is there scope for making a really fruitful combination of old and new that will enhance both? The paper here suggests that this is possible, but that, without some changes to the practices of planning provincial parks, it will be difficult to assure the protection of the most valued parts of Sandbanks' cultural heritage. Sandbanks is, like Gold Rock, an unfinished story, but perhaps more optimistic in tone: its heritage is being taken seriously in the preparation of management and interpretation plans, and eventually it may serve as a precedent for other provincial parks.

The last two cases each deal with a single feature. At both Niagara Falls and Newmarket the features represent the beginning of the modern infrastructure of utilities and transportation that has enabled southern Ontario's development as a major industrial power. More than any of the other cases, the Toronto Power Station is an unfinished story, for work on its revitalization and re-use is gathering momentum even as this is written. But while the contribution in this collection certainly intends to assist that effort directly, it is included here as well to illustrate what we mean by the often controversial idea of significance. A distinctive feature of our man-made heritage may be important to some and not to others – importance *to whom* is as crucial as importance *for what*. The Toronto Power Station is a case study of the many dimensions of history, of the importance and of the meaningfulness that are embodied in the artifacts of our predecessors. It is also a case study of the many dimensions of archi-



10. Lakeshore Lodge, Sandbanks, a heritage resource in a pastoral, gentle, and heavily-used part of the Lake Ontario shoreline.



11. The Toronto Power Station , Niagara Falls, a monument to the history and architecture of hydro-electric development in Ontario.





12. The Newmarket bridge, a rare survivor of the earliest use of reinforced concrete in a civil engineering work in Ontario, and a relic of an almost forgotten interurban railway that connected Lake Simcoe and Toronto during the first few decades of this century.

texture: the proper treatment and adaptation of a building or ensemble once retained is as vital as retention itself. Not only must the existing building be respected, but the necessary additions must themselves command respect. Good *new* design is no less important to our heritage than the inheritance itself.

The Newmarket bridge is the most localized of our cases, and it serves to complete the series with as happy an ending as we can expect. The concrete arch bridge had survived as a lonely remnant of an almost forgotten interurban railway that took thousands of Torontonians to summer holidays at Lake Simcoe early in this century. Its value as a rare engineering achievement was recognized barely in time to rescue it from demolition in a well-intentioned river valley conservation scheme. While it was an instance where conservation meant different things to different people, the episode ended with recognition that these different conceptions could be brought together happily.

So even at the end we see that continuity and change are not antagonistic. They are essential to one another. These contributions, and the much larger body of work in planning the conservation of our heritage from which they are taken, are based on that simple premise. What these cases should illustrate is that we must take hold of the changes that affect us and turn those changes to our advantage. The quality of the lives we lead depends heavily on our ability to maintain, in the context of continuing change, a sense of place, a sense of time, and a sense of propriety. Many of the buildings and landscapes of Ontario that we have inherited show us how well our predecessors did just that. And now, when change is more rapid and the costs far higher, we simply have to work that much harder to care for what is best from our past.

M. Fram  
J. Weiler





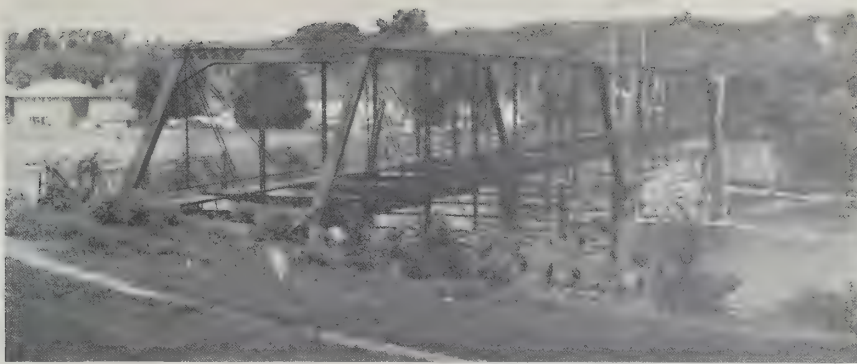
# **Planning and the conservation of man-made heritage in Ontario**

John Weiler



## planning &





## conservation





“Change and recurrence are the sense of being alive — things gone by, death to come, and present awareness. The world around us, so much of it our own creation, shifts continually and often bewilders us. We reach out to that world to preserve or to change it and so to make visible our desire. The arguments of planning all come down to the management of change.”<sup>1</sup>

Kevin Lynch

## Introduction

If planning is about the management of change, then Ontario faces a tremendous challenge. Building and redevelopment are constantly encountered in our cities and towns. Urban growth, highway construction, new electricity transmission lines, resource extraction, and other developments continue apace in the countryside. While these changes promise many things of present value, they often threaten to disrupt or destroy our heritage - not only in areas of natural beauty and wildlife, but also in distinctive man-made landscapes, fine buildings, and archaeological resources. If our cultural heritage is to be treated with respect, and if it is to be of practical use in our daily lives, we must plan for conservation.

It is essential to the proper understanding of any subject that it be discussed in clearly defined terms. In the present case there is need for definition of two words at the outset: “Planning” and “Conservation”. The word “planning” is being used here to describe the activities and processes of making decisions about the future physical, social, economic, and cultural conditions of our environment as required or enabled by the statutes of the Province of Ontario. Planning action can be the responsibility of local authorities or the Province. Sometimes it is legally shared by both jurisdictions. The degree of permissible planning

action varies according to the statutory instrument through which planning authority is exercised. The word “conservation” embraces a wide variety of questions concerning the wise use of our environment. It does not mean freezing new development. Change and decay are inevitable. New development in our living environment is often necessary to ensure public health and safety or the continued economic viability and social well-being of a particular community or the province as a whole. Well-designed new development can also add to the beauty of our surroundings besides helping us to function better in our day-to-day lives. Conservation seeks to protect, restore, enhance, and maintain our cultural inheritance and to ensure that new development is compatible with the forms and patterns of development traditional to Ontario. The objective is continuity with change and the harmonious conjunction of past and present.

This essay explores a number of fundamental questions concerning planning and the conservation of our man-made heritage. What is man-made heritage and for whom is it important? Why is it worth conserving? How is it affected by changes in land-use, new development, and land disturbance activities? Who has statutory responsibility and what should be

done to plan for heritage conservation? The answers to these questions are concerned with attitudes as much as with facts. Inevitably, values and prejudices emerge, but for this the author offers no apologies. Planning is a subject dominated by contentious issues; to exclude such issues in a discussion on making decisions about heritage conservation would be as unreal as it would probably be impossible.

### **What is man-made heritage and for whom is it important?**

“Heritage” is an evocative word. It is commonly used to identify an object or activity for which people have particular affection as something that belongs to them in some way. In the language of law it refers to any property that devolves by right of inheritance. It is in conjunction with this legal use of the word “heritage” that the international community of conservationists have developed the term “cultural property”.

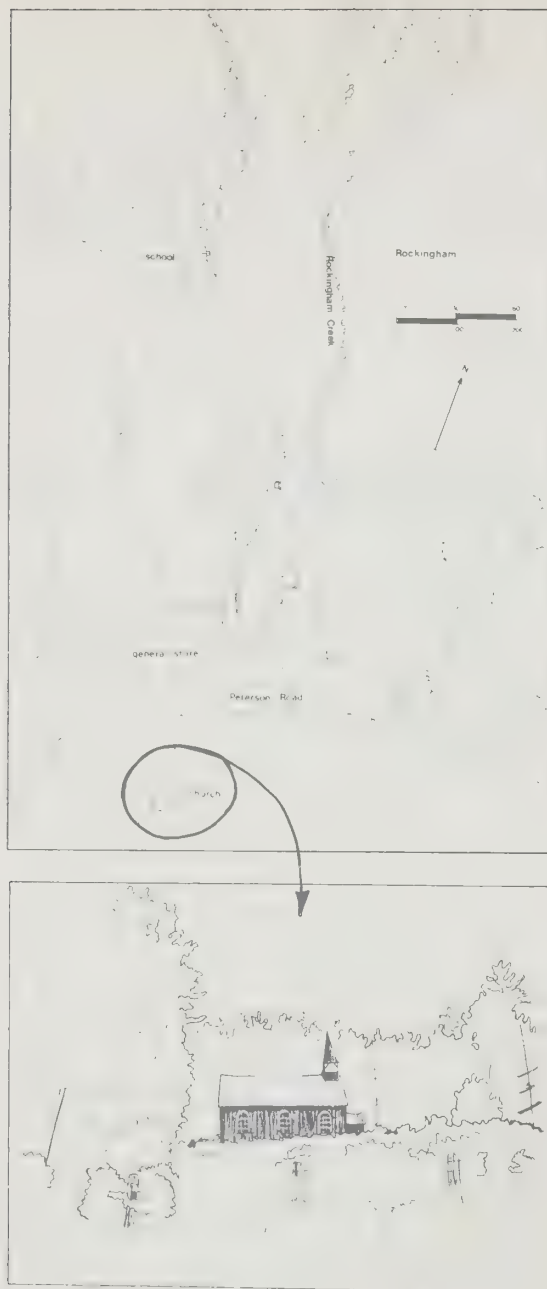
Cultural property refers to a broad range of objects. It can include both movable property such as works of art, crafted objects, manuscripts, and printed material, and immovable property such as monuments, historic sites, archaeological sites, natural sites, natural districts, and historic districts.<sup>2</sup> In this essay, however, we are concerned with the works of man and the effects of his activities in the environment, rather than with movable human artifacts or those environments that are natural and completely undisturbed by man.

The separation implied between man and nature in the environment is one of convenience only. Landscape is not a static background that we inhabit, but the interaction of a society and the habitat it lives in, and if either man or habitat changes, then so invariably must the resulting landscape.<sup>3</sup> There are, however, different techniques involved in the con-

servation of natural landscape and the structures with which man has punctuated or altered the scene. In practice it may often be necessary to trespass some way beyond the boundary between the two. While keeping this in mind, we may define property as man-made heritage where it may be seen as the consultable record of past human activities, endeavours, or events and constitutes part of the environmental inheritance of the people of the whole or any part of Ontario.

Having defined man-made heritage as part of the environmental inheritance of the “people” of Ontario, it is logical to ask who these people are and what their particular interests in cultural property may be. We may distinguish interest groups on the basis of their particular stake or investment in cultural property, and according to distinctive community, ethnic, or social relationships among individual persons. A cultural investment is made by creating or using a landscape or physical feature that, through time, becomes important in the lifeways, beliefs or institutions of the group involved. A cultural investment may be the focus of local, regional, provincial, national, or international concern.

Community, ethnic, and social groups express their interest in cultural investments in a variety of ways. A few examples will help to illustrate this point. They are by no means definitive or mutually exclusive. An ancient burial ground has sacred and symbolic meaning for a native Indian Band whose ancestors are interred there. In a similar way, the distinctive style of a Greek Orthodox church is cherished by people who are members of that religious sect and an agricultural landscape and farm architecture built with traditional materials and construction methods and eschewing many modern conveniences are vital to the Mennonites of the Waterloo region who created them. Cultural investments are expressed in a different way by a community of professional and amateur



scholars that may regard a place or building as a valuable object for the study of Ontario history, architecture or archaeology; or by an amenity society that may view lands or buildings of historic interest in a community as opportunities for recreation and education. And finally, a businessman's association may regard the fine old commercial buildings of its town core and the historic routes into this core as the basis for the town's attractiveness to resident shoppers and tourists, and therefore an important reason for the town centre's continued economic and social prosperity.

There are, of course, a number of formal groups that express interests in cultural property such as Heritage Canada, the Ontario Historical Society, the Ontario Archaeological Society, the Architectural Conservancy of Ontario, and the local historical societies, heritage trusts and foundations. There are as well those official public bodies especially concerned with heritage such as the Local Architectural Conservation Advisory Committees appointed by municipal councils, and the Ontario Heritage Foundation, which is an agency of the Ministry of Culture and Recreation. Nevertheless, whether organized or informal, the views of those groups that have cultural investments in places and buildings are critical in planning for the conservation of the province's man-made heritage.

The articulation of an interest in cultural property, however, is no simple matter. Personal recognition of man-made heritage in our surroundings obviously depends not only on what lies in the beholder's eye but also on what lies in his head. Several people may look in the same direction at the same instant and each report a different version of the same scene, unless they have been trained to interpret meaning in the same way. Moreover, the very extent of our knowledge of optics, psychology, epistemology, and culture might lead us to despair of ever synthesizing



out of it all a way to articulate perceptions of man-made heritage according to a coherent body of ideas. But nevertheless, try we must. The nature of our democracy dictates that planning is a political process based on a dialogue between public and private interests, a dialogue where the positions of various interests must be relatively certain and well-expressed. The following is an attempt to describe how perceptions of man-made heritage may be described with reasonable certainty and clarity.

Man-made heritage in the environment can be the entire scene that one can take in at a glance from one point of view or it can be only part of it. The viewpoint can vary enormously as well. Nevertheless, we may distinguish broadly between two basic ways of visually experiencing man-made heritage in the environment: as cultural landscape and as cultural feature. While we may not be able to perceive both simultaneously, they do exist together.

Cultural landscape is the use and physical appearance of the land as we see it now as a result of man's activities over time in modifying pristine landscapes for his own purposes. A cultural landscape is perceived as a collection of individual man-made features melded into a whole. Urban cultural landscapes are sometimes given special names such as townscape or streetscape that describe various scales of perception from the general scene to the particular view. Cultural landscapes in the countryside are viewed in or adjacent to natural, undisturbed landscapes or waterscapes and include such land-uses as agriculture, mining, forestry, recreation, and transportation. Like urban cultural landscapes, they too may be perceived at various scales: as a large area of homogeneous character; as an intermediate-sized area of homogeneous character or a collection of settings such as a group of farms; or as a discrete example of specific landscape character such as a single farm, or an individual village, or hamlet.<sup>4</sup>



2a. Urban cultural landscape — townscape, Brockville.

2b. Urban cultural landscape — streetscape, Port Hope.

2c. Rural cultural landscape — Euphrasia Township, Grey County.

3. Historical association with a well-known person – the homestead of former Prime Minister Arthur Meighen, Perth County.

4. Historical association with formative activity – the White House, built by a well-to-do member of the United Empire Loyalists in 1793 at Collins Bay, Lennox and Addington County.

5. Historical association with endeavor of relative antiquity – the Parish of St. Raphael, begun as a Mission for the Highland settlers on the Raisin River in 1786, is one of the oldest in the province. The fine stone church was begun in 1821 and was gutted by fire in 1970.



A cultural landscape viewed as heritage will have one or more of the following attributes. It may be the only one of its kind, one of the remaining few, or the most outstanding example of its kind. The moving eye may perceive it as a built-up area with a particularly interesting and attention-catching series of visions; or a strong and definite sense of position or place may be experienced by the observer. The cultural landscape may have a unique or typical material content, well executed in terms of colour, texture, style, and scale. It may be exemplary of distinctive cultural processes in the historic development and use of land. A cultural landscape may be part of a complex of outstanding historic and scenic areas, or may be perceived as part of an ensemble of different landscape types such as townscape/agricultural landscape/natural landscape/waterscape. And finally, it may be part of a network of different landscape types as mentioned above, and presents to the moving eye opportunities for special sequential experiences or a series of distinctive scenic views.<sup>5</sup>

A cultural feature is an individual part of a cultural landscape, which may be either focussed upon as part of a broader scene or viewed independently. The term refers to any man-made or modified object in, on, or under the land. This includes buildings of various types, street furniture, engineering works, planting and landscaping, archaeological sites, or a collection of such objects seen as a group because of close physical or social relationships. A cultural feature viewed as heritage will have certain distinguishing attributes. These may be considered under three general categories: historical associations; architectural or engineering qualities; and archaeological potential.

Historically, a cultural feature would be considered as heritage if it is associated with one or more of the following: a well-known event; a well-known person or group; the first or formative aspect of activity;



activity or endeavour of relative antiquity; activity of substantial duration; and activity or endeavour that affected a substantial population or geographic area.<sup>6</sup>

Architectural or engineering qualities that would identify a cultural feature as heritage include one or more of the following: it may be a representative work of a generally recognized surveyor, architect, engineer, master builder, or craftsman; it may have group value, especially as an example of town planning; it may have been well executed within the conventions of a recognized period style or method of construction, it may be a technological innovation or adaptation or represent engineering virtuosity; it may be a good typical example of an early style or construction technique or of an early structure or device commonly used for a specific purpose throughout an area or period, it may have an unusual or unique style or construction technique; it may be the first or earliest of a surviving type, the last or latest surviving specimen of a type, or the only example or one of the remaining few of a particular type; it may be a landmark in its setting; and it may contribute to the unity and harmony of its neighbourhood.<sup>7</sup>



6



7



8



9

6. University College, Toronto, a representative work of the outstanding architectural firm of Fredric William Cumberland and William G. Storm.

7. This row of small houses in Peterborough, viewed as a group, is a delightful architectural composition.

8. The Barnum House, Grafton, completed 1817, is one of the finest neo-classical style buildings in the province.

9. A technological adaptation – wrought iron bridge, made-to-measure in Canton, Ohio, erected over the Grand River in Paris, 1877.

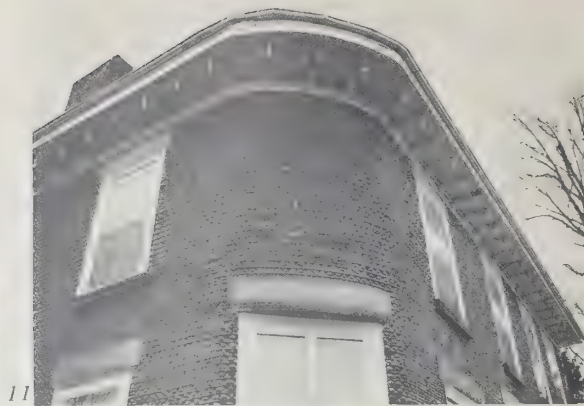


10. A good typical example of the ubiquitous Ontario Gothic farmhouse. It is built of local limestone from the Niagara Escarpment in Keppel Township, Grey County.



10

11. An example of unusual cobblestone construction technique, Paris.



11

12. The relatively unusual use of the octagon plan in a house near Maple, a design influenced by Orson Squire Fowler, a New York phrenologist who promoted the octagonal fashion of house building.



12

13. Remains of radial railway bridge constructed over the Holland River at Newmarket in 1907. One of the first reinforced concrete arch bridges to be built in Canada, designed by the outstanding and innovative engineering firm of F. Barber and C. R. Young, it is one of the few surviving features of its kind in the country.



13

14. A landmark in townscape — St. Mary's Town Hall (1891).



14

15. A landmark in the countryside — Cheltenham Brickworks (1914-1964).



15

10

Finally, a cultural feature would be considered as heritage if it has potential through archaeological exploration, survey, or fieldwork to increase our knowledge and understanding of history and related human sciences and therefore our appreciation of our material past. Archaeological potential may be identified in one or more of the following conditions. The archaeological investigation of a cultural feature may provide answers to specific questions about particular times and places and the events and processes that occurred there in the past. Archaeology is often the only way we have of learning about prehistory; and through archaeology, accepted ideas about our history that have been developed from written and oral records may be substantiated or reinterpreted from material evidence in the environment. An archaeological undertaking may provide an opportunity to test the validity of general principles in anthropology, especially those relating to the process of long term culture change and ecological adaptation. Lastly, the archaeological study of a cultural feature may be the means through which various technical, methodological, and theoretical advances are likely to occur in the use of science to help us discover and understand our past.<sup>8</sup>

In order to recognize man-made heritage, the manner through which one selects the scenes to be viewed and the method used in viewing are of equal importance to the way one interprets meaning in a scene. This process is generally known as research. Once one has defined the physical limits of the environment to be examined for man-made heritage as well as the purpose for this examination, documentary and fieldwork research strategies and techniques may be determined.

The documentary component of research involves the development of a body of data about the study area through the analysis of printed sources, manuscripts, records, and documents, as well as other



16. Archaeological excavation of Whitefish Hudson's Bay Company Post near Kenora.

17. Techniques of archaeological excavation – the use of science to help us discover and understand our past.



18. The celebration of history through commemorative plaques.

19. The celebration of history at Upper Canada Village outdoor museum, Morrisburg.

20. The preservation of archaeological artifacts serves scholarly study and provides educational enjoyment.



18



19



20

material such as photographs, maps, and tape recordings. This work is done in libraries, archives, record offices, and similar institutions and preferably by people with training in historical research.

The fieldwork component of research involves cultural landscape assessment and the survey of cultural features both visible and hidden in the land. Cultural landscape assessment and the survey of cultural features in our visible surroundings — the built environment — begins with the examination of documentary data, especially maps and aerial photographs, and with interviewing knowledgeable residents in the locale. This helps to pinpoint the location of significant prospects of scenery and important visible cultural features. Research work in the field is normally undertaken by individuals with training in landscape evaluation and architectural history and involves the recording of observations through sketch elevations and plans, photographs, detailed drawings of key elements, and maps. Archaeological survey provides a closer look at, and different perspective on, our visible surroundings, and permits us to see culture features that are hidden in the land, beneath the ground, or underwater. Documentary research and collaboration with local people are necessary starting points for archaeological survey. Fieldwork normally involves strategic walking of the terrain, complemented by the in-hand study of relevant maps and aerial photographs. More importantly, it involves soil sampling, surface collection, and test excavation. Some form of detailed examination is the only certain way to confirm the existence and meaning of early remains about which the documents are silent or non-existent. Since excavation involves the removal of evidence from its interpretative context, the skill and care with which the job is done are of primary importance. The process is both labour intensive and time consuming. For purposes of identifying archaeological potential, it is preferable that disturbance of cultural features



through excavation be kept to an absolute minimum. Archaeological exploration, survey, or fieldwork in the province requires a licence under section 48 of *The Ontario Heritage Act, 1974*.

### Why is man-made heritage worth conserving?

Man-made heritage is worth conserving because it is meaningful and useful to people. The realization of this principle has been given a new importance as part of the conservator society ethic now enjoying increasing popularity throughout most of the industrialized world. Like fossil fuels, the original, unaltered fabric of things made by man is irreplaceable. But, like air, water, and living things, our inherited places and buildings can often be protected, restored, and improved. Many meaningful uses are therefore possible for man-made heritage.

Scholarly study and public education are perhaps the oldest and most accepted uses of man-made heritage in Ontario. The past has been examined by interpreting history in the landscape, and this history has been celebrated physically in a number of ways from commemorative plaques to outdoor museums. Valuable and irreplaceable human artifacts unearthed through archaeology have been preserved, and these material remains continue to serve scholars and other interested people as indicators of developments in technology and culture.<sup>9</sup>

Aesthetic appreciation and environmental amenity in man's works are also important. People desire beauty in their surroundings as well as structural soundness and functional utility. Recent trends in recycling older buildings may well be in part a response to the public's disenchantment with the appearance of modern structures.<sup>10</sup>



21. Aesthetic appreciation as an important reason for conservation — Wedding Cake House, c. 1870, Markham.



22



23

22. Conserving the old and familiar surroundings of the village general store helps maintain a sense of security and well-being in the community.

23. Conservation also makes sense on economic grounds. The former stables of the Toronto Street Railway Company (1881) were recycled for use as the Young People's Theatre in 1977.

Related to aesthetic appreciation and environmental amenity, but more critical for meaningful life, is the use that old and familiar surroundings have in maintaining a sense of security and well-being in society. Future shock is a phenomenon that has been well documented by the studies of psychologists and sociologists. These studies have established the importance of material links with the past, as well as the memory of the past, in avoiding the stress created by rapid change in, and increasing uncertainty about, the physical character of our habitat.<sup>11</sup>

Finally, man-made heritage can be meaningful and useful in economic terms. Maintaining, restoring, rehabilitating, and recycling our property can often provide usable space at less cost than equivalent new building. It can also create more jobs in relation to project cost than new construction because of the labour-intensive nature of the work, and saves on the overall consumption of non-renewable building materials and energy normally used in new building projects. Conservation of our man-made heritage can also provide opportunities for economic benefits from tourism. It can be said that the environment is the indispensable basis, the major attraction for tourism. Ontario possesses a rich variety of distinctive man-made landscapes, towns, and villages of scenic and historic attractiveness. Many already serve as destination points or travel routes for tourists. Tourist activity not only increases the income of tourist operators, but may directly assist active conservation in the form of entry fees to historic attractions, parks, and structures, and by providing new uses for old buildings as part of the tourism plant. With careful planning, tourism and conservation can be made to work together.<sup>12</sup>

Nevertheless, heritage conservation is not without its critics. Varied interpretations of the words heritage and conservation produce antagonism from several directions, often in very extreme form and sometimes in unlikely combinations. Conservationists and planners must attempt to understand and deal with these criticisms if their work is to be effective.

One of the most widely held criticisms is that the conservation of our heritage places and buildings inhibits progress and change in both a material and imaginative sense, when these are fundamental to a healthy free market economy. Particular emphasis is put on the problems of maintaining economic vitality in town commercial centres that coincide with historic cores. New commercial units require, so the argument goes, large horizontal areas of sales space and wide shop fronts, as well as convenient parking, to attract customers and maintain maximum turnover, particularly if they are in competition with suburban shopping malls; yet historic areas tend to provide retail units in small, vertically divided sections.<sup>13</sup> These are serious practical problems for which solutions must be found. Nevertheless, it would be fair to question the general assumption that progress and a free market economy are necessarily desirable ends for our society in all circumstances.

Criticism has also been levelled at heritage conservation on the grounds of social injustice. It has been argued that the preservation of buildings of inefficient design or of little economic use prevents the building of new housing or work-places merely because powerful minority groups regard old buildings as intrinsically good. Meanwhile, because of conservation, many ordinary people must continue to live and work in cramped, unsuitable conditions. Also, critics have contended, pointing to specific examples, many conservation and rehabilitation

schemes in residential areas, whilst creating the impression of improving the existing residents' surroundings and conserving their social environment, actually push out most of these people by increased rents and prohibitive improvements costs and many suffer the added inconvenience and costs of finding themselves further from the town centre and its facilities. In short, the conservation of the physical environment of these residential areas is in no way related to the retention of the communities in them. The emotive term for this process is "gentrification". Another social criticism has been that the conservation of some areas, particularly with road proposals, is at the expense of other areas, a process where lower classes and weaker community groups pay for the environmental quality of more powerful conservation and amenity interests.<sup>14</sup> Although in many cases these criticisms are based on an accusation of "elitism", which is easy to make of any movement, there is some truth in all of them, and past experience has demonstrated that much greater care is needed to ensure that the physical planning objectives of heritage conservation are compatible with social planning concerns.

Finally, there is an argument against heritage conservation that comes from history itself. Those who appreciate history as a process may regard the conservation of our man-made heritage as an artificial attempt to interfere in inevitable change even to the extent of trying to stop or reverse time in selected environments. They would argue that if conservationists had their way in the past as they sometimes do now, resistance to redevelopment would have deprived the present of many of the historic landmarks that today we cherish.<sup>15</sup> The irony of this truism cannot be denied, but given the tremendous rate and scale of growth and change in the twentieth century, and the political, economic, and technological advantages that new development has on its side today in comparison with earlier



24. Adverse effect — demolition.

25. Adverse effect — unsympathetic alteration.



24



25

works of man, particularly prehistoric ones, conservationists probably need not be overly concerned about such criticisms.

### How is Man-Made Heritage Affected By Change In Land-Use, New Development, and Land Disturbance Activities?

Our man-made heritage is being affected increasingly by changes in land use, through new development, and by our activity in using the land for resources and as a receptacle for waste. The principal factors in determining the nature of change and its effects on man-made heritage are space and time. Accordingly, the level of effects caused by an undertaking on our heritage places and buildings varies in terms of whether the agent of change is short or long in duration, site specific or widespread, high or low in physical impact, and reversible or irreversible. Moreover, the level of effect measured in terms of these variables will be different for each phase of an undertaking — pre-construction, construction, operation and maintenance, and reclamation and abandonment. Effects on man-made heritage can be either adverse or beneficial, or both simultaneously.

Adverse effect may be defined as one or more of the following conditions: the destruction or unsympathetic alteration of all or part of a cultural property; the isolation of a cultural property from its surrounding environment; and the introduction of physical, visual, audible, or atmospheric elements that are not in character with the cultural property and its setting.<sup>16</sup>

Beneficial effect may be defined as any action that either protects, restores, enhances, or maintains a cultural property. This effect may be achieved in a number of ways. A cultural property, particularly one in a ruinous condition, may simply be protected



26



27



28



29



30

26. Adverse effect – isolation, an old railway station moved from its home beside the tracks to a new environment where it looks lost.

27. Adverse effect – introduction of an element not in keeping with the character of the setting.

28. Beneficial effect – left to return with dignity slowly to nature.

29. Beneficial effect – made structurally stable and kept as a monument to our past, a century-old wrought iron bridge.

30. Beneficial effect – restoration, the Prince George Hotel (c. 1817) and City Hall (1842-44) in Kingston.



31. Beneficial effect — rehabilitation, the Wellington Hotel, Guelph.

32. Beneficial effect — enhancement, the Norfolk County Court House (18-63), converted to serve as the Town of Simcoe Administration Building, and well integrated addition (1976-77).

31



32



from willful destruction by man, but otherwise left to return with dignity slowly to nature. Where it is desirable to establish an enduring monument to our past, the form and extent of a cultural property may be retained entirely as is, further deterioration arrested, and structural stability provided, but without further significant building. In some circumstances, it is appropriate to go beyond this, recovering accurately the form and details of the cultural property and replacing missing or worn-out parts with copies made of identical materials and executed in the same fashion as the original work. Moreover, where there is critical concern for the continued viable use of a cultural property as accommodation either for the current purpose or for a new use, repairs or alterations may be made using modern materials and construction methods, new space and circulation plans, and building services, while keeping heritage elements wherever possible. Finally, a cultural property may be enhanced by the addition of new buildings, street furniture, planting, landscaping, and lines of circulation that are designed in harmony with neighbouring structures and the general surroundings. The beneficial actions described here are by no means mutually exclusive, and often the maximum benefit is achieved by an imaginative combination of different conservation strategies.<sup>17</sup>

An example may help to illustrate some of the potential adverse and beneficial effects of change in land-use, new development, and land disturbance activities on man-made heritage. Let us take the case of a new provincial highway.

The development of a new provincial highway, once the need for it has been established, begins with the selection of a preferred route among alternatives. This is a critical decision point. It determines which of perhaps several alternative cultural landscapes will be modified, and consequently, what heritage places may be directly affected by the undertaking.



Detailed design comes next in the planning phase. The most critical factor in determining the character of the new road, and therefore the potential effects on man-made heritage, is the traffic speed for which the road is designed. Traffic speed affects not only width, surface, and super-elevation, but also the degree of permissible curves and gradients, which, in turn, affect the relationship of road to landscape and the degree of flexibility in avoiding, protecting, preserving, and enhancing man-made heritage. The road design can make possible a scenic "roadscape": the view of the road from its surroundings, if it is in harmony with the surrounding cultural landscape in both vertical and horizontal alignment, width of right-of-way, type of carriageway, cuttings, and embankments, and road verges. On the other hand, it may introduce a development that is of such markedly contrasting form as to represent a very discordant component in the surroundings. The new road design also determines "offscape": the view from the road experienced by motorists. The offscape can be a scenic delight if the new road design ensures that a sense of penetration into, and a serial vision of features in, the surrounding cultural landscape is maintained long enough to register on the fast-moving eye. Finally, the design of the new road determines to what degree buildings, structures such as bridges, road-side furniture such as fences, planting and landscaping, and archaeological sites on or in proximity to the road right-of-way may be avoided, protected, preserved, and enhanced. A poorly designed new road forces either the demolition of these cultural features and the loss of their material heritage value or their re-location and isolation from their original surroundings, thereby destroying the context of their meaning and much of their value as part of our heritage. A well-designed new road permits the retention of such features as environmental amenities for continued or adaptive use.

Actual construction of the new road can have many effects on man-made heritage. Care in construction practice is critical. For example, road-side furniture and planting in proximity to the road right-of-way either can be damaged by construction practice or preserved and enhanced by well-executed treatment of the road verges as provided for in the detailed design. Moreover, construction activities usually range over a much larger area than the right-of-way as a result of the building of temporary access roads and service lines and the utilization of nearby sources of mineral aggregate. Archaeological sites are particularly vulnerable to these latter activities.

Finally, the operation and maintenance of the new highway, and the reclamation and abandonment of sites and routes used in construction, can have positive or negative impact on man-made heritage. Most important is the potential infrastructural effect. If the region through which the new provincial highway passes was previously only accessible by boat or air, some areas are more likely to experience pressures from new industrial and commercial development, and any resulting change to man-made heritage would be considered as an infrastructural effect of highway development. Also, the careful rehabilitation of construction access routes and temporary detours and of wayside pits and quarries, abandoned after the development of the new highway, can make important contributions to amenity in the man-made landscape.

#### **Who has statutory responsibility and what action should be taken to plan for heritage conservation?**

A concern for the conservation of Ontario's man-made heritage can be traced to the pressure group activities of The Ontario Historical Society (1898) in the late 1800's and early part of the present century<sup>18</sup>; the management of historic properties by the Niagara Parks Commission (1887) beginning

with Queenston Heights (1895) and later Butler's Burial Ground (1907), Old Fort Erie (1908), and the Drummond Hill cemetery at Lundy's Lane (1910-12); the public works programmes of the Depression Era including Fort George (1937-1940) at Niagara-on-the-Lake and Fort Henry (1938) at Kingston<sup>19</sup>; and *The Archaeological and Historic Sites Protection Act, 1953* (revised 1956, 1959, 1960, 1970). It was not until the 1970's, however, that concern for heritage conservation planning was reflected specifically in the statutes of the Province of Ontario. This new interest followed in the path of powerful activity by environmental conservationists in the United States a decade earlier, which had resulted in the passing of *The National Historic Preservation Act* of 1966, and *The National Environmental Policy Act* of 1969. The Ontario legislature responded to the new wave of environmental concern by enacting *The Ontario Heritage Act, 1974* and *The Environmental Assessment Act, 1975*. Nevertheless, the theory and practice of conservation and planning for man-made heritage have deeper roots. These formative experiences have taken different paths in different places, but a general, long-term pattern may be discerned. It is instructive to examine the evolution of this pattern in order that we might better understand where heritage conservation planning is going or ought to go in Ontario.

The idea of conservation made its initial appearance in ancient civilizations as the *de facto* preservation of a particular building or work of art as a cult image or sacred object. Such antiquarian emotions were eventually transformed into an intellectual concept, first traceable in late medieval England and Italy. Conservation, in the modern sense, and concerning the care of cultural properties, has developed within the last two centuries in western Europe.<sup>20</sup> Contemporary conservation theory and practice throughout most of the world is the result of certain basic steps, which most countries have

taken, in forming a legal structure for the planning and management of heritage resources. These steps may be generally described as follows.

In the beginning, interested people join together to produce surveys of historic landmarks and protect them by purchase. Next, a government department is established and eventually produces inventories or "lists", which may include scholarly analysis. Soon after, legislation is introduced to protect the most important of the items on the lists against destruction, removal, or inappropriate alteration. Funds are usually provided in conjunction with this legislation by either the central or the local government for the purchase, repair, and restoration of buildings and sites, and statutory means are made available for the expropriation or compulsory purchase of properties where they are neglected. Provisions originally for individual properties are eventually extended to cover whole areas or districts. Most recently, conservation measures are being linked to a comprehensive planning framework involving repair and selective retention as well as some renewal and redevelopment, and explicitly associated with both economic development through tourism and regional planning.<sup>21</sup>

Canadians have not followed this pattern exactly, and in some cases we may not have paid sufficient attention to international precedents when developing our own statutory measures for heritage conservation.<sup>22</sup> Ontario has had its successes and problems with conservation and planning law,<sup>23</sup> but perhaps one issue stands out at this time more than others. Heritage conservation planning in the minds of many local authorities, and in some government ministries and agencies, has become synonymous with *The Ontario Heritage Act, 1974*. While the Act does have specific practical uses in planning, people's perceptions of it have tended to obscure the fact that there are a number of other Provincial statutes

which affect, in a broader way, physical planning for the conservation of Ontario's man-made heritage. Individually and collectively these statutes enable and regulate Provincial, local authority, and private policies and undertakings concerning the use and development of land, as well as the management of renewable and non-renewable resources. Consequently these statutes have a critical and widespread impact on man-made heritage resources and efforts to conserve them. Powerful forces are at work to promote the use of these statutes for the special interests of development in agriculture; mining; forestry; transportation; water resources; energy production; housing; commercial and industrial enterprise; and tourism and recreation. There is also the potential to use these laws for conservation - for the wise use of the land and the activities on it in the interests of the public as a whole. Keeping this in mind, let us look at the question of statutory responsibility for conservation and planning in Ontario.

Responsibility for heritage conservation planning can and should be undertaken by both local and provincial authorities. Local planning is governed principally by *The Planning Act*. Official Plans developed by municipalities under this statute should contain both policy and implementation statements on heritage conservation. Such statements should include, but not be limited to, a clear indication of the municipality's intent to promote and undertake heritage conservation; the potential use of individual property and district designations under *The Ontario Heritage Act, 1974*, the potential use of development control provisions of *The Planning Act* and *The Municipal Act*, as well as special planning statutes, such as *The Niagara Escarpment Planning and Development Act, 1973*, and, finally, the potential use of financial assistance programmes to achieve heritage conservation objectives such as the Business

Improvement Area (BIA) under section 361 of *The Municipal Act* and the Ontario Ministry of Housing's Main Street Revitalization and Downtown Revitalization programmes. Wherever a municipality has a policy statement concerning heritage conservation in its official plan, it may prepare a secondary plan to designate Heritage Conservation Districts under *The Ontario Heritage Act, 1974*.<sup>24</sup>

Conservation Authorities carry out a form of local planning in their capacity as managers and developers of watersheds. This activity has a significant impact on the man-made heritage of the province, particularly on prehistoric archaeological sites and water-side structures of historic, architectural, and industrial archaeological interest. Accordingly, policy and implementation statements on the conservation of cultural property should constitute an important part of watershed management plans prepared by Authorities under *The Conservation Authorities Act, 1973*.

On the provincial level, there are three statutory instruments that specifically require or enable planning for the conservation of man-made heritage. The administration of *The Planning Act* involves the Province in many important ways. This statutory planning role is now under review, and a recent draft Planning Act has proposed that a general statement of broad provincial interests will be incorporated in the new Act to indicate that in reviewing planning applications, the Minister of Housing will have regard to provincial physical, economic, and social development policies. One of these policies is "the protection of features of significant natural, architectural, historical or archaeological interest." *The Planning Act: a Draft for Public Comment (December 1979)* further proposes a new instrument to formally declare and publish matters of provincial policy affecting municipal planning: policy circulars. While not having the full legal force of statutory



regulations, these circulars will have to be taken into account by municipalities, the Ontario Municipal Board, and Provincial ministries and agencies when dealing with any planning matter. With the proclamation of a new Planning Act, the Provincial interest in heritage conservation could therefore be defined more precisely, and it is to be hoped more effective conservation planning may ensue. In addition to *The Planning Act*, the Province has a role in heritage conservation planning under *The Niagara Escarpment Planning and Development Act, 1973*. *The Proposed Plan for the Niagara Escarpment* prepared by the Niagara Escarpment Commission under this Act was released for public comment in November 1979. It is expected that an approved Niagara Escarpment Plan will define formally the Provincial interest in conserving the man-made heritage of this unique landform of Ontario. Finally, *The Environmental Assessment Act, 1975* provides a basis for both Provincial and local authority environmental planning. It is necessary to comply with the definition of environment in the statute to identify and evaluate man-made heritage resources as part of environmental assessment.<sup>25</sup>

In addition to the specific statutory planning instruments described above, Ontario has abundant legislation to enable effective heritage conservation planning for cultural properties owned by the Province or affected by its development and resource management activities. Some examples will serve to illustrate this point. They are by no means complete. The Ministry of Natural Resources may plan for the conservation and interpretation of man-made heritage resources as part of its outdoor recreation and land management responsibilities under *The Provincial Parks Act* and *The Public Lands Act*. The Ministry of Government Services, under *The Ministry of Government Services Act*, may make plans to systematically renovate, maintain, and repair premises, buildings, and structures that are provincially owned

and used for government accommodation, including those properties that are considered part of our heritage. The Ministry of Transportation and Communications may, as directed by provincial roads transportation planning under *The Public Transportation and Highway Improvement Act*, maintain and use buildings and alter any natural or artificial feature of any land required for the development of new roads or the improvement of existing ones, in a way that is sympathetic to the conservation of cultural property. The Ministry of Housing may, as part of community development planning, establish corporations under *The Housing Development Act* to undertake housing development projects, which could renew existing heritage dwellings or recycle other building stock of historic or architectural interest carrying out their purpose. Ontario Hydro under *The Power Corporation Act* may conserve its historic generating stations and sites, and take care to protect, avoid, and preserve culture properties in undertaking new electrical energy development works.

The current legislation of the Province of Ontario discussed above could be utilized effectively for heritage conservation planning if certain basic principles were observed, albeit within the legal provisions of each specific regulatory or enabling statutory instrument. These principles may be outlined as follows.

Planning can provide for the continued meaningful use of existing cultural landscapes and cultural features by controlling those developments that would physically destroy or unsympathetically alter cultural property or isolate this property from its indigenous surroundings. Development on, or in proximity to, known archaeological sites or areas where such sites might reasonably be expected to exist should take care to avoid and preserve these sites. Development affecting the built environment should



33. Retaining and using cultural property in new development.





34. Three attempts at fitting new buildings into older surroundings with varying degrees of success.



be encouraged, through controls and incentives, to examine the economic and social feasibility of retaining and using existing cultural properties that may occur on the development site. Relocation of buildings should not be encouraged as a preferred alternative to conservation *in situ*.<sup>26</sup>

Planning can also provide controls and incentives for new development to be in harmony with neighbouring cultural property. In built-up areas, development as infill or for expansion of the area should observe the general mass, height, and setback of surrounding buildings and not be a markedly contrasting form in the area. New development should not be discordant with the materials and colours used for surrounding buildings, including roofs if visible, especially if these materials and colours afford a strong unifying element in a street or group as a composition. Buildings introduced to an older neighbourhood should have windows, doorcases, and other features on elevations that relate satisfactorily to adjacent buildings. They should also have a roof style that is compatible with those of the neighbourhood. In the countryside, development should be compatible with the surrounding landscape in terms of siting, scale, and materials. New lots created by subdivision or severances should observe the orientation and partition of lots characteristic of the existing pattern in the cultural landscape. New or improved roads and utility lines should follow existing rights-of-way wherever possible and be unobtrusive in design, particularly with respect to alignment.<sup>27</sup>

Moreover, planning can help to ensure continuity in the sense of place even with a change in use. In both town and countryside, whenever permitted development replaces a former use, the new development should express the former use in some way. This may include one or more of the following: preserving and displaying fragments of former built features





35. Farm buildings built at different times are in harmony with one another and with the setting.



36. Two attempts at expressing a former use in new development.

and landscaping; marking the traces of former locations, shapes, and circulation lines; displaying graphic and verbal description of former occupation; and reflecting former architecture and plan in the new development.<sup>28</sup>

Nevertheless, planning sometimes is unable to prevent the destruction or unsympathetic alteration of cultural property. Under such conditions, however, planning can provide for actions to salvage information on the cultural landscape or cultural feature to be lost. Such actions could include, for example, an archaeological salvage or rescue excavation, or the recording of standing structures through measured drawings or photogrammetry.<sup>29</sup>

Planning action to achieve the objectives of heritage conservation should, as all well-planned action, be the result of a thoughtfully defined process. It would clearly be ridiculous to suggest that heritage conservation planning should follow a rigidly compartmentalized procedure in a mechanical and uncreative way. Nevertheless, in planning any environment it is logical to assume that some attempt will be made to shape the future on the basis of some analysis of the present, and in the course of this process, some alternative futures will be suggested with their relative advantages and disadvantages. There have been many attempts to codify the various stages that planning could involve. One such model was developed recently based on a wide review of literature in planning, operations research, and general management. Nine parts are included; they are merely descriptive, and their order is not fixed: (1) problem recognition; (2) data collection, analysis, and forecasting; (3) description of the planning system; (4) determination of constraints, opportunities, goals, and objectives; (5) design of alternative plans; (6) evaluation of alternative plans; (7) decision making on policies; (8) implementation; and (9) review.<sup>30</sup> Each and every part is not required



for every planning enquiry. Circumstances not involving a change in use normally necessitate a much less complicated identification of factors, forces, and opinions and their analysis in terms of options for future action. The following is a discussion of how this model might be used for heritage conservation plan making.

The conservation planning process for man-made heritage should begin with the identification and legal definition of the cultural property involved, the identification of the property owner and the agents of change, and a description of what changes are planned that may affect the cultural property. Next comes the evaluation of the heritage significance of the cultural property in terms of its physical attributes and meaning for people as discussed earlier in this essay. Following this, a structural survey of the cultural property should be provided to determine what structural faults are present in the property and what actions are necessary to put them right and in what order of priority. It is then important to examine who will use the cultural property and how it will be accessible through appropriate market, land-use, and transportation analysis. After all these things are done, it should be possible to refine the detailed design and technical requirements for execution. It should also be possible to assess the probable physical, economic, social, and cultural effects of the planned changes, and to determine a systematic method of evaluating the advantages and disadvantages of alternate courses of action.

But the conservation planning does not end here. Prospective actions to conserve cultural property through planning must consider various statutory regulations with which the proposed change or project must comply. Official plan policies, local by-laws, building codes, fire regulations, and licence and permit requirements are particularly important.





Some thought must also be given to identifying who will manage the project, examining the detailed specifications and cost of any work to be done to implement planning action, and determining how the project can be financed. Moreover, performance criteria should be specified to monitor the project and determine to what degree the conservation objectives have been achieved through planning action. The project should then be implemented by skilled hands and under the watchful eye of qualified supervisory staff. Finally, after an appropriate period for observation, the results of the changes or project should be reviewed.

The planning process for man-made heritage conservation described here is by no means definitive.<sup>31</sup> It simply illustrates that conservation planning, like any other planning action, should be the result of a broad and systematic enquiry into the physical, economic, social, and cultural conditions that influence the life of man or a community. Modifications of the process are obviously necessary to meet the requirements of different statutory planning instruments and the programme objectives of the particular planning authority. But without a rational, well-defined, and rigorous process, conservation planning actions may have unhappy results.

### Conclusion

This essay has attempted to demonstrate that planning for the conservation of Ontario's man-made heritage is an important and necessary part of making decisions about our future. It has defined the province's distinctive man-made landscapes in town and countryside, its fine buildings, and its archaeological resources, as part of our environmental inheritance, worthy of conservation for important social and economic reasons. The opportunities and threats from change to our cultural investments in man-made heritage have been de-

scribed along with the statutory authority and planning actions available and necessary to carefully direct change to encourage conservation. Finally, it has been argued that heritage conservation planning must be based on concepts and a decision making process that are both theoretically sound and practicable.

Effective conservation planning is not easy. Some people's fear or distrust of authority and attitudes of self-reliant individualism often prevent full acceptance of planning and its regulations on private or public property. Moreover, attitudes in Ontario, and indeed in Canada as a whole, may not be as conducive yet as those in many other places to the regulation of the free market and the control of resource-use to place public interest ahead of private interest. Actions to achieve heritage conservation objectives through planning must therefore offer incentives to carefully balance statutory controls. It is also important to remember that such intervention in our economy and communities most often plays a very small part, or no part at all, in the survival of our heritage places and buildings. The major agent in conservation is the private or public property owner working without any extraordinary legal restriction or subsidy.<sup>32</sup> Conservation planning should have as its ultimate aim the gradual elimination of the need for major intervention to balance individual and collective aspirations in the use and appearance of our environment.

Nevertheless, the need for statutory controls and incentives to achieve heritage conservation planning objectives is likely to be with us for some time. Ideals never become reality. It should be possible, however, through imaginative interpretation, to use each and every statute of the Province that affects heritage conservation planning, not in the pursuit of independent policies to meet single purpose objectives, but rather to explore opportunities for

integration, for multiple use, and for flexibility.<sup>33</sup> Conservation could become for Ontarians the starting point for an inductive planning method, where conservation is defined first as the sympathetic use of the environment and second as sensitive com-

munity revitalization. Conservation therefore would no longer be regarded as the exclusive concern of “specialists” or as a “constraint” to be identified in planning future change. Conservation would be the concern of planning in general.

## Notes and References

1. Lynch, K. (1972). *What Time Is This Place?* Cambridge, Massachusetts: MIT Press. p. 1.
2. For an excellent discussion of the meaning of the term “cultural property” see: Québec. Le ministre d’État au Développement culturel (1978). *A Cultural Development Policy for Quebec*. Québec: Editeur Officiel du Québec, Volume 2.
3. Fairbrother, N. (1970). *New Lives, New Landscapes; Planning for the 21st Century*. Chatham, England: The Architectural Press. p. 4.
4. There are a number of recent studies that deal with the concept of cultural landscape discussed here. See, for example: Polytechnic of North London, Department of Geography (1978). *Historic Landscapes: Identification, Recording and Management*. (An Occasional Paper); United States Department of the Interior (1978). *Scenic Heritage Classification and Evaluation: A Report Prepared for the Heritage Conservation and Recreation Service, U.S. Department of the Interior*, by the Scenic Heritage Classification Systems Panel, E.H. Zube, Chairman, 5 April 1978; and Meinig, D.W. (1979). *The Interpretation of Ordinary Landscapes*. N.Y.: Oxford University Press.
5. This description of heritage attributes in cultural landscape is particularly indebted to the following: Cullen, G. (1971). *Townscape*. Chatham, England: The Architectural Press; and, United States Department of the Interior (1978). *op. cit.*
6. There are a number of studies that discuss the question of historical associations in cultural property. Two of the more useful ones are: Faulkner, A. (1977). *Without our Past*. Toronto: University of Toronto Press; and, Denhez, M. (1978). *Heritage Fights Back*. Toronto: Fitzhenry and Whiteside. Also useful is Appendix I: “Listing of Buildings of Special Architectural or Historic Interest - Principles of Selection” in United Kingdom, Department of the Environment (1977). *Historic Buildings and Conservation Areas - Policy and Procedure*. London: HMSO.

7. This description of architectural and engineering qualities in cultural property is very much indebted to the following: United Kingdom, Department of the Environment (1977). *op. cit.*; Faulkner, A. (1977). *op. cit.*; Buchanan, R.A. (1972). *Industrial Archaeology in Britain*. Penguin Books; and, Canada, Department of Indian and Northern Affairs (no date). *Canadian Engineering Heritage Record; Guidelines for the Preparation of Survey Report*.
8. See: Schiffer, M.B., and House, J.H. (1977). "An Approach to Assessing Scientific Significance" in *Conservation Archaeology*, edited by M.B. Schiffer and G.J. Gumerman, N.Y.: Academic Press. pp. 43-63.
9. See Lowenthal, D. (1979). "Age and Artifact," in *The Interpretation of Ordinary Landscapes*, edited by D.W. Meinig, N.Y.: Oxford University Press. pp. 103-128.
10. See: Denhez, M. (1978) *op. cit.*
11. See: Lynch, K. (1976) *Managing the Sense of a Region*. Cambridge, Massachusetts. MIT Press; and Lynch, K. (1972) *op. cit.*
12. There are a number of recent books and articles that discuss the economic benefits of heritage conservation, but a definitive study remains to be done. However, the following are very useful: Galt, G. (1974) *Investing in the Past: A Report of the Profitability of Heritage Conservation*, Ottawa: Heritage Canada; Denhez, M. (1978) *op. cit.*; Walsh, D. (1978). "Opinion" in *Heritage Canada*, June 1978, p.10 and p.65; "The Recycling of America" in *Time*, June 11, 1979, pp.46-49; Save Britain's Heritage (1979) *Preservation Pays: Tourism and the Economic Benefits of Conserving Historic Buildings*, London: Save Britain's Heritage; and Stein, R.G. (1978) *Architecture and Energy*. N.Y.: Anchor Books.
13. Dobby, A. (1978). *Conservation and Planning*, London: Hutchinson. pp.26-27.
14. Dobby, A. (1978) *op. cit.* pp.27-28.
15. Dobby, A. (1978) *op. cit.* pp.29-30.
16. United States, Department of Housing and Urban Development (1975) *Interim Guide for Environmental Assessment, HUD Field Office Edition*, Washington, D.C.: U.S. Government Printing Office.
17. The approaches to the definition of beneficial effect on cultural property used in the statutory planning and conservation programmes of the United States and United Kingdom are instructive. See, for example: U.S. Department of Housing and Urban Development and U.S. Department of the Interior (1977). *Guidelines for Rehabilitating Old Buildings*. Washington, D.C.: U.S. Government Printing Office, and, United Kingdom, Department of the Environment (1977) *op. cit.*
18. Killan, G. (1973) *Preserving Ontario's Heritage; a History of the Ontario Historical Society*. . . Ph.D. thesis, McMaster University, Hamilton, Ontario. pp.264-322.
19. Ontario, Ministry of Natural Resources (1978). *Ontario Provincial Parks Planning and Management Policies*. unpublished Policy Document.
20. Harvey, J. (1972) *Conservation of Buildings*. London: John Baker Ltd., p.26.



21. Dobby, A. (1978) *op. cit.*, p.72.
22. Denhez, M. (1978) *op. cit.*, p.98.
23. See, for example: *Minutes and Proceedings of the Ontario Historical Society Conference on Preservation Legislation in Ontario* (1977); *The Ontario Heritage Act: Present Problems, Future Prospects*, compiled and edited by G. Killan, Toronto. The Ontario Historical Society; and Denhez, M. (1978). *op. cit.*, pp. 80-81 and pp. 106-107.
24. The Ontario Ministry of Culture and Recreation has produced *Guidelines on the Designation of Heritage Conservation Districts*.
25. The Ontario Ministry of Culture and Recreation has produced *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (1980).
26. Schiffer, M. B., and G. J. Gumerman (1977). *Conservation Archaeology*. N.Y.: Academic Press; United States, Department of Housing and Urban Development (1975). *op. cit.*
27. Burke, G. (1976). *Townscapes*. Pelican Books. pp. 174-187; Dobby, A. (1978). *op. cit.*
28. Lynch, K. (1976). *op. cit.*
29. Schiffer, M.B. and G. Gumerman, (1977). *op. cit.*; King T.F. (*et al.*) N.Y.: Academic Press.
30. Sarly, R.M. (1972). *The Planning Process*. London: School of Environmental Studies, University College, Planning Methodology Research Unit Working Paper No. 2. See also: Davidson, J. and Wibberley, G. (1977). *Planning and the Rural Environment*. N.Y.: Pergamon Press, pp. 188-191.
31. For a more detailed look at the subject of a problem solving process for heritage properties see: Ontario Ministry of Culture and Recreation (1979). *Guidelines to Heritage Structure Investigations*. Prepared by Elyse Parker, Heritage Administration Branch, Ministry of Culture and Recreation, Toronto.
32. See: McWilliam, C. (1975). *Scottish Townscape*. London: Collins, pp. 192-193. The critical importance in heritage conservation of sympathy and responsibility resting primarily with the property owner is an important principle in this well-known British scholar's philosophy of conservation and planning.
33. The same argument has been made by two experienced British environmental planners and scholars concerning problems in rural planning. See: Davidson, J. and G. Wibberley (1977). *op. cit.*, pp. 187-188.



# The customary shores

Tracing and conserving the material past in its historic contexts on the Rideau, Quinte, Trent, Simcoe and Severn waterways

Mark Fram





2. Wellington and the Sand-  
banks, Prince Edward  
County, 1980.



## Introduction

Too often, efforts to conserve and recycle historically important and useful buildings and districts come too late to be effective, since basic decisions about major development take place at a regional or national scale. If we are to recognize and act to protect the best of our man-made heritage, we must develop strategies and techniques for landscape and building conservation to deal with regional problems. We must also acknowledge that resources and time for such tasks are going to be limited not by the academic requirements of the problem, but by the actual constraints of the need to make decisions for policy and action. Further, as every building or district in a region exists in several historic, economic, visual, and cultural contexts, the sheer numbers and richness of features in even small regions make detailed inventory impossible and useless. How then are we to decide how and where to concentrate our limited means in the effort to save essentials of this regional heritage?

What we need is a method that systematically relates a series of discrete yet interdependent historic trends to generalized types of terrain and buildings in order to show how any man-made feature is important and meaningful in its locale and the wider region. Such a method should provide a solid footing for detailed examination of the cultural and personal associations of individual properties. It should lay out the arguments for retaining and enhancing our cultural inheritance. And it might even show how conservation tactics might be most effectively applied.

Moreover, such a method must recognize the dynamism inherent in territories undergoing the rapid changes of settlement and urbanization. Even relatively remote places experience the economic and cultural pressures generated by urban centres. This

urbanization has a dramatic three-fold importance. In its degree and pattern it is at once the material evidence of the historic forces that have shaped and continue to shape the region; the agent of continuing change and disruption; and the political context within which development, conservation, and recycling of land and buildings take place.

This essay presents an admittedly partial answer to these requirements. It goes quite far in laying out the complexities of the historic and regional contexts for conserving man-made features of our heritage, and shows how these complexities might be traced in the towns and countrysides of today. But it provides only an outline, a preliminary direction, for the requirements of regional planning itself. At this writing, the overall effect by provincial and national governments to co-ordinate regional policies in the areas we shall examine here has not yet reached a resolution. The regional problems remain.

## Background

This essay, which forms part of a larger body of research and planning work,<sup>1</sup> intends to show in quite broad terms how man's past use of the land is materially expressed in the present-day landscape, and in equally broad terms how the traces of that expression might be conserved in the face of modernization and urbanization. The region in question is in fact a long and narrow band of land and water. It passes through several physiographic and cultural territories, following the courses of the Rideau, Trent, and Severn waterways, which are in turn linked by the Bay of Quinté and Lake Simcoe into a continuous 425-mile navigable course for pleasure boats. For much of their length the waterways lie along the geological boundary between the Precambrian Canadian Shield and the Pleistocene glacial deposits to the south and east. The obvious physiographic differences provide for quite different uses

of land on and off the Shield, and the appearance of the land varies considerably throughout.

While there is no longer commercial cargo traffic on this chain of lakes, rivers, and canals, the number of pleasure boats on the waterways increases annually. The waterways attract considerable numbers of tourists in boats and automobiles. This provides a welcome source of economic benefits to the local municipalities and landowners whose traditional industrial and agricultural pursuits have been languishing for many years. But these benefits have not come without certain costs. The water environment itself is particularly vulnerable to additional water traffic, increasing sewage, shoreline erosion, and conflicts between public and private access. And there are corresponding pressures on nearby lands, even well back from the water, for housing and resort development. In 1967, the federal government, which operates the navigable portions of the waterways, and the provincial government, which has jurisdiction over the use of the adjoining lands and their local governments, combined to establish the CORTS (Canada-Ontario-Rideau-Trent-Severn) Committee. Both governments have since agreed to co-ordinate their planning and development activities through an Agreement Board representing several federal departments and provincial ministries. A set of general policy propositions, or framework plan, has been developed by these agencies since 1977. The Agreement Board is preparing a policy statement for the approval of both governments to express the intent of the framework plan and determine the future of the CORTS agreement.

Early in these government discussions and accompanying public hearings the planners acknowledged the unique human and natural heritage of this waterway "corridor" as its chief asset. If this heritage were to be exploited as a chain of tourist attractions, then it would be necessary for government to ensure

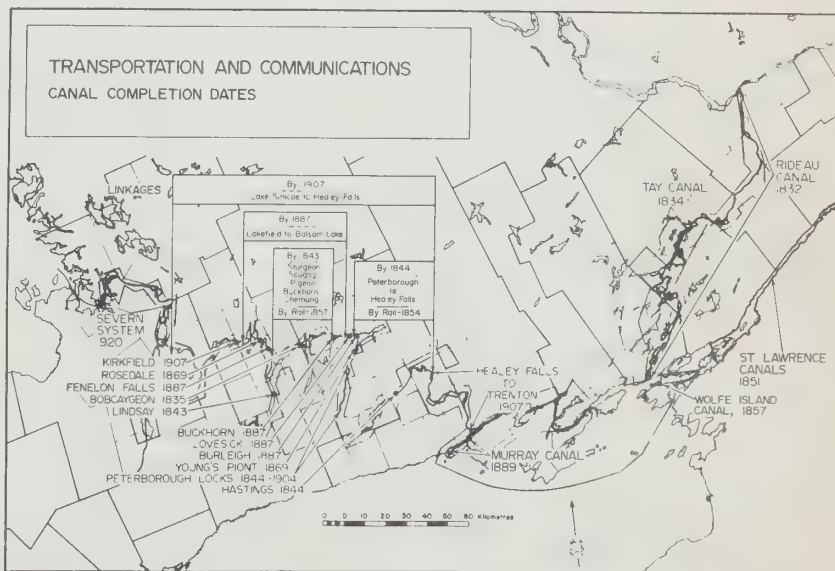
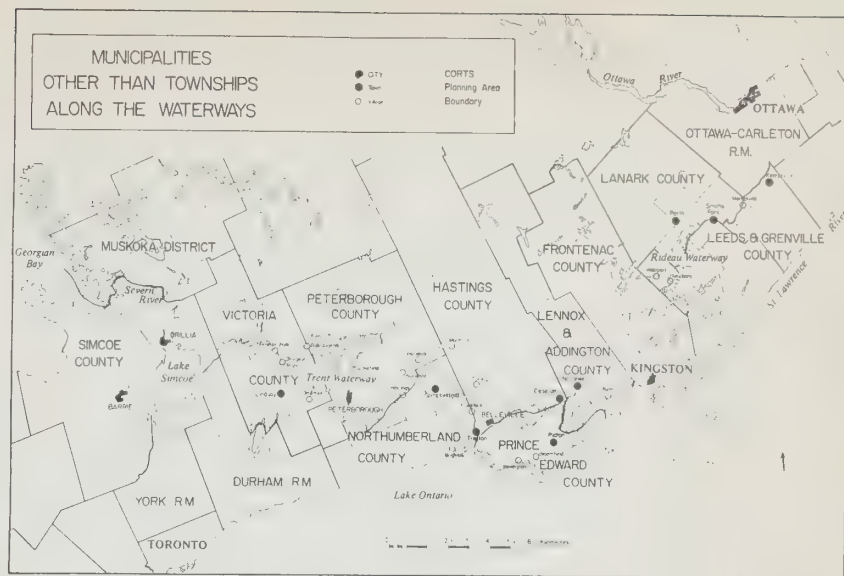
that the asset was not devalued by new private and public developments. In 1976, the CORTS Agreement Board asked Parks Canada, the federal agency responsible for matters of heritage, and the provincial Ministry of Culture and Recreation's Historical Planning and Research Branch to work together in studying the problem, identifying the most important features, and proposing means to protect them. A federal agency had declared the Rideau waterway itself to be of national significance in 1967, but no comprehensive examination of the CORTS "corridor" had been made.

### **The CORTS Study**

The study began in earnest early in 1977 and for practical purposes concluded in December of 1978. A six-member working group undertook considerable field work and documentary research for both visible and archaeological features from the earliest native occupation to the present day. The portion of the study that is briefly described here was directed to the problem of relating to the man-made environments of today what we of the working group understood to have taken place in these regions since the year of the first British land surveys. The task was to show how the distinctive buildings and landscapes of the waterway regions — the customary shores of the title — were produced by the currents of history. We had to provide general explanations or historic contexts for an area containing more than a million people in more than 100 municipalities, strung out along a 500-mile band of land and water. An inventory of "historic buildings" was out of the question. Much of the information would be outdated before action could be taken to conserve notable properties. Even with lavish funding, such an inventory would have avoided the basic questions: how do we decide which historic, architectural, or scenic features in these regions are worth protecting, how are they to be protected, and who will protect them?



We were only peripherally concerned with personal property (domestic utensils, clothing, farm equipment, food, and the like) that is either portable or highly perishable. However, one must keep such personal objects in mind, for it is through these things that people make practical use of the buildings and landscapes they create or inherit. Our central interest lay in what we called the material history of the landscape (the general, geographical concept of landscape as a habitat in addition to its more restricted sense as scenery). We wished to explore the human development and use of real property: land, buildings, roads, mines, productive forests, urban settlements, and so on. Each of these features is an artifact, a work of man and woman. The aggregation of these artifacts into towns and countrysides can also be considered an artifact, what geographers refer to as a cultural landscape. On the basis of fieldwork we defined a series of generally applicable (at least to southern Ontario) material types, and outlined briefly the historical development of each type. In a parallel and simultaneous effort we drew up specific trends or themes of social and economic history from documentary sources. These historical themes intended to account for the forces, events, and agents of environmental change from the earliest human occupation up to the present and even into the future. By relating specific historical themes to specific material types in a structural way, we tried to reveal the traces of historical patterns of human use in the present-day landscape. The problem was to do this with limited resources in a general and open-ended manner, and provide a coherent context for detailed local investigations and conservation plans as subsequent opportunities presented themselves.



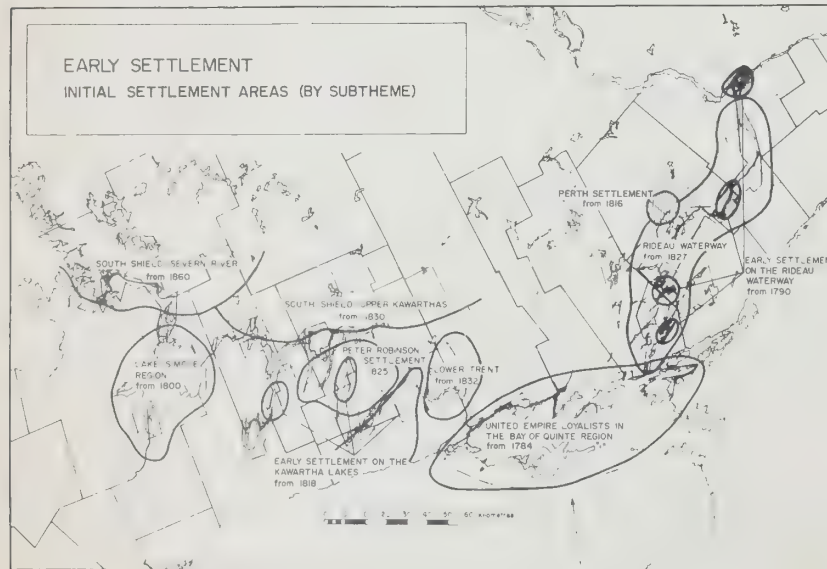
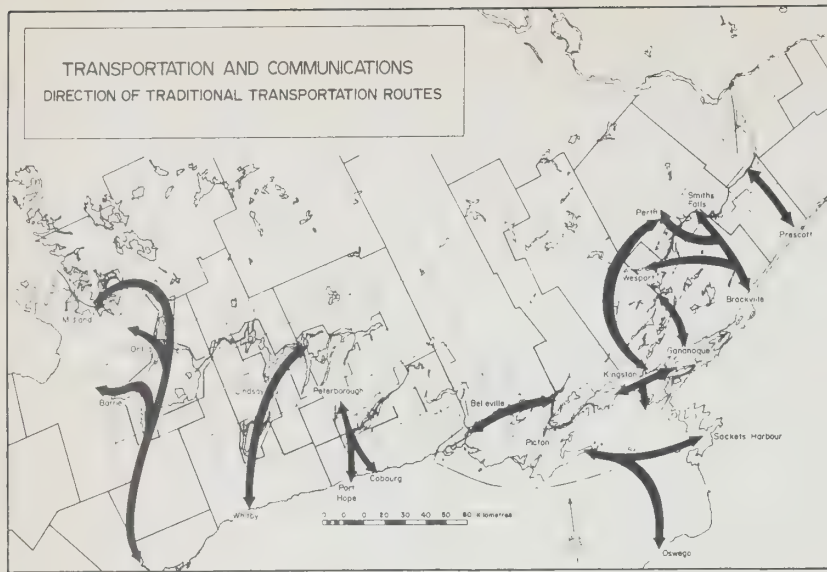
3. The CORTS regions.

4. The development of navigation.

## Historic themes

Sorting the bulk of recorded history in the waterway regions into discrete yet interdependent currents isolated and clarified the basic historical processes by which the cultural landscapes we see today were created. The changing appearance of these landscapes reflects changes in the use of land, the economic and social purposes of the inhabitants, and the changing public and private perceptions of the environment as a resource to be exploited or conserved — or both. These perceptions change when one generation leaves its landscapes to the next, or when new groups move in and older ones leave. In general, the southern Ontario landscape has evolved from wilderness to rural countryside to urban or urbanizing settlements, but there are many variations and discontinuities as the effects of some economic activities wane and others grow. The present-day landscape must be seen as the stage for several present-day, ongoing historical themes and sub-themes or episodes. These themes and sub-themes account for changes in the landscape that tend to overwhelm and obliterate the remains of earlier episodes that are no longer operative. This constant revitalization and re-occupation of the landscape is an ongoing process throughout history. The succession of man-made landscapes is quite similar in principle and effect to the natural succession of plant and animal ecology.

The listing of generally applicable themes and their more specific sub-themes that appear here is abstracted from the considerable documentary evidence provided by local histories, original documents, maps and county atlases, travellers' accounts, and numerous academic research projects.<sup>2</sup> The historic trends reflected in the listing apply to the broad regions through which the waterways pass. The accompanying maps clearly indicate the wide geographic contexts within which portions of the waterway or individual features must be considered. Fur-



5. Traditional transportation routes.

6. First settlements.

ther, the overlapping nature of these historic trends in both time and space adds to the complexity of each locale. So that some order may be seen in this complicated portrayal, the chronological listing of sub-themes assigns one, two, or three stars to each episode in order to give some idea of those whose effect on the landscape was generally more marked. A sub-theme with three stars is considered, in its period, more essential than other sub-themes in its locale in accounting for overall economic transformation, and in directly or indirectly producing great

material impact within its general theme. A two-star sub-theme has similar importance but is on balance a less powerful agent of change. A one-star sub-theme is still important, but its effects are usually more localized or subsidiary to more powerful historical trends. Some sub-themes are important as formative influences, others as indicators of a mature and healthy economy and society, and others as forces at work now and in the foreseeable future. The assigned "rating" is simply a judgement as to their relative role in shaping the land over time.

7. The Rideau locks at the Ottawa River, Chateau Laurier to the left and Parliament Hill to the right, 1980.





8. Ruins of docks at the site of a former lodge on Athol Bay, Prince Edward County, 1980.



## Material types

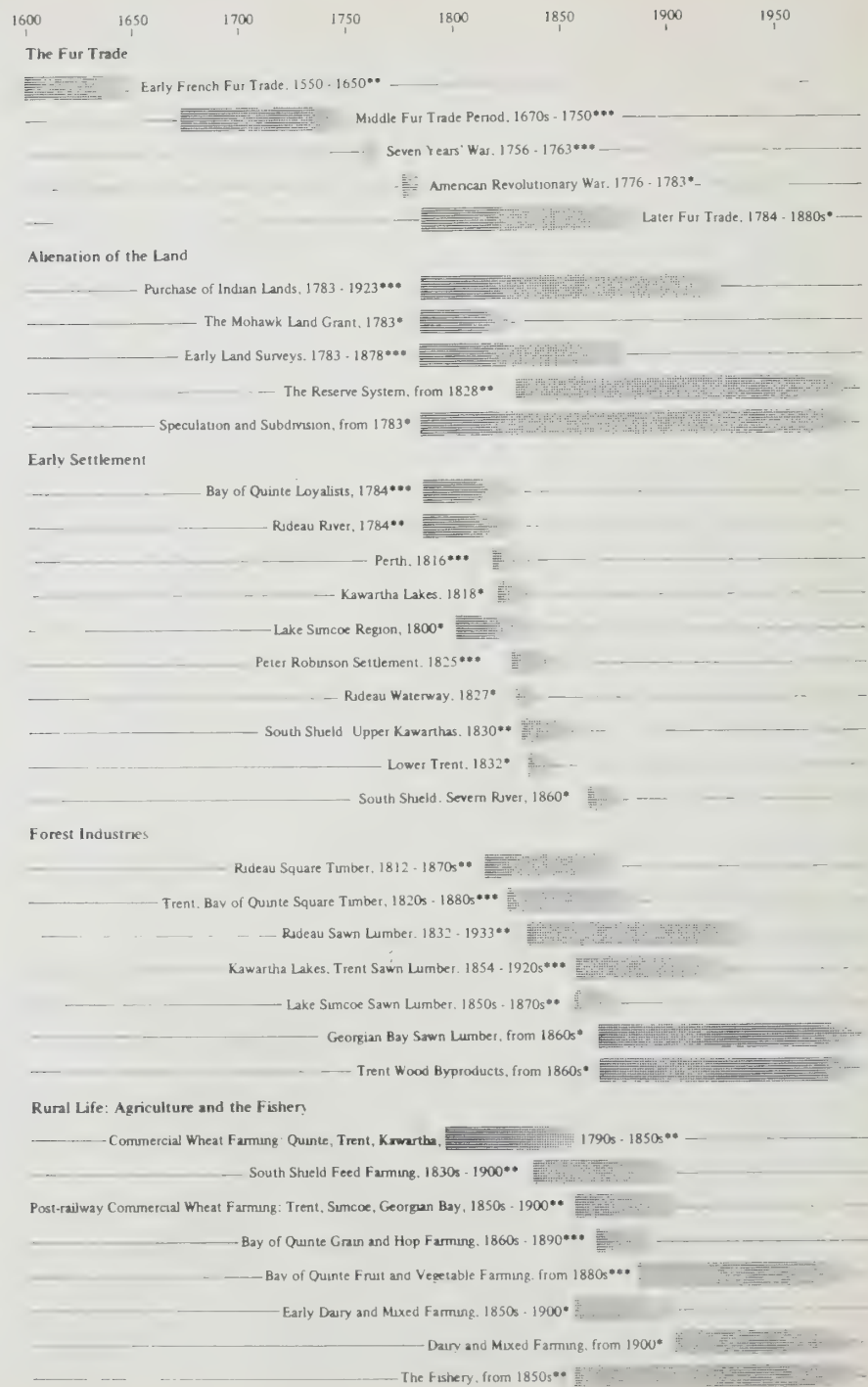
The thematic approach just described has been used in some form throughout North America to organize the required historical investigations upon which are based the planning of historical parks. Normally, it is accompanied by a complete inventory of buildings and other man-made features. The inventory is assessed against the sub-themes to provide contexts for the preservation and interpretation of individual features within an overall management strategy or plan. But in the waterway regions the regional scale, the absence of a central authority or even an effective co-ordinating body, and the logistical impracticability of a complete inventory all required that the material artifacts in the landscape be sorted out into classes or types. These types could then be related to the historical trends in a general and broadly applicable manner rather than in great detail.

For the waterway regions we defined eighteen material types. There would seem to be a potentially large number of different typologies of this sort that might be applicable, but our principal concern was to have the smallest number of meaningfully discrete types, within which might fall any number of sub-classes upon detailed study. Just as the historical themes and sub-themes intended to unravel the fabric of history into useful strands, these material types intended to unravel the fabric of the environment itself into similarly useful strands. In the end, both sets of strands had to be rewoven into the overlapping and continuing patterns of time and place unique to these regions. Accordingly, the brief material histories that follow are not independent of one another, but simply the individual threads of the man-made environment separated for a clearer understanding of how they actually go together and present themselves to these regions, past and present.<sup>3</sup>



9. Glenora, with Lake-on-the-Mountain above, the mills below doing new duty as a provincial fish station, and the car ferry for Highway 33, 1980.

TABLE 1





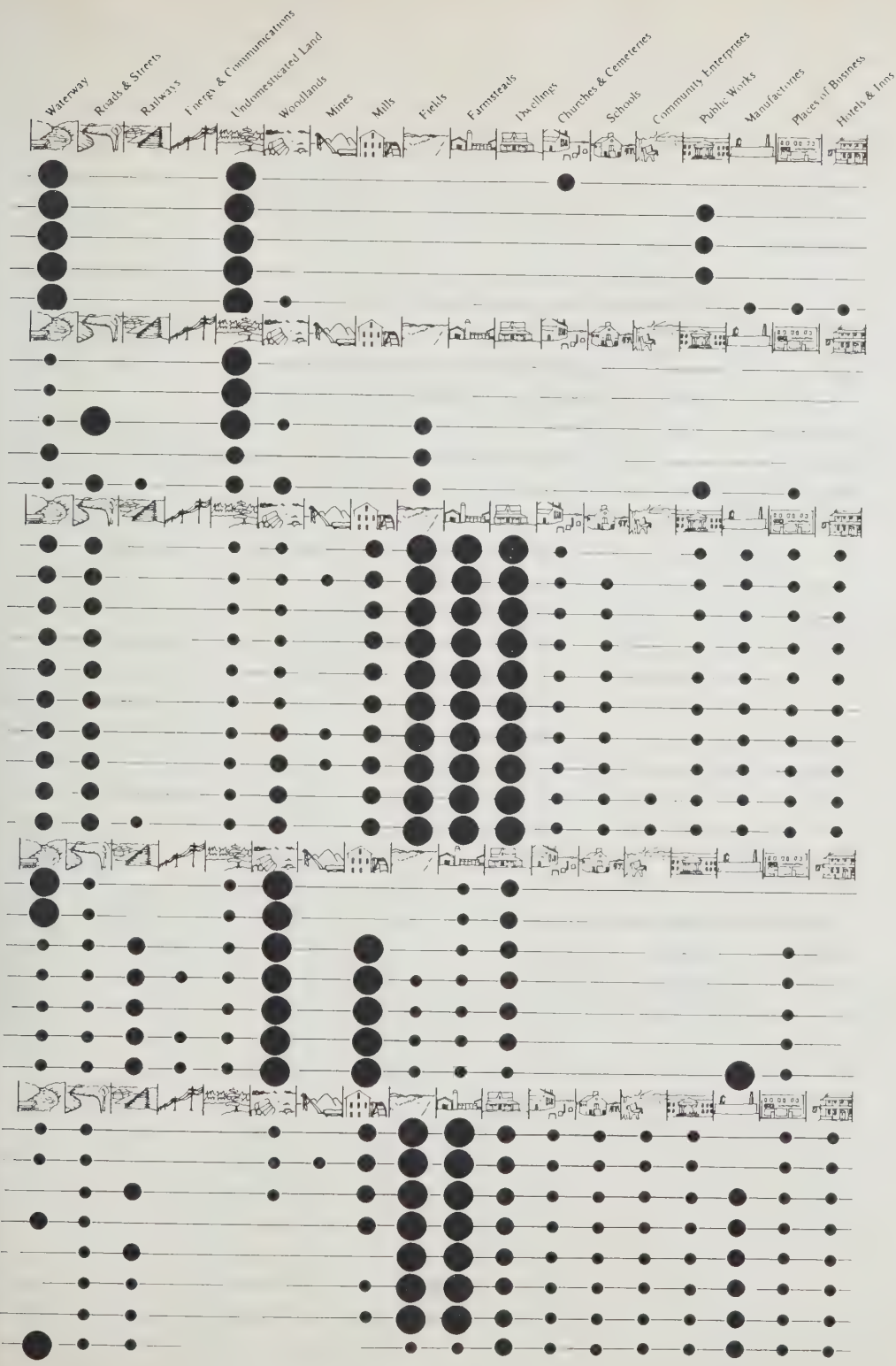


TABLE 1

continuation

## Mining

— Domestic Iron Smelting: Lyndhurst and Marmora, 1801 - 1856\*

— Building Material Extraction, from 1800\*

— Phosphate, Mica and Feldspar: Rideau Waterway, 1850s - 1960s\*\*\*

— Small Scale Gold Mining: Hastings and Peterborough Counties, 1866 - 1911\*\*

— Small Scale Graphite and other Minerals, from 1860s\*\*

— Large Scale Iron, 1868 - 1978\*\*\*

— Portland Cement, from 1886\*\*\*

## Manufacturing

— Local Staple Milling, 1784 - 1870s\*

— Regional Staple Milling, from 1830s\*\*

— Handcraft - Processing, 1784 - 1920s\*\*

— Workshop Production, from 1820s\*\*

— Food Export Processing, from 1860s\*\*\*

— Factory Production, from 1860s\*\*

## Transportation and Communications

— Early St. Lawrence - Lake Ontario Shipping, 1783 - 1847\*\*

— Lower Lake Ontario Ports' Shipping, from 1790s\*\*\*

— Early Rideau Canal, 1835 - 1847\*\*\*

— St. Lawrence - Lake Ontario Shipping Improvements, from 1847\*\*

— Trent - Severn Internal Shipping, 1832 - 1940s\*\*

— Rideau Canal Internal Shipping, 1846 - 1930s\*\*

— Early Roads, 1790s - 1850s\*

— Colonization Roads, 1850s - 1870s\*

— Provincial Highway System, from 1920\*\*

— St. Lawrence - Lake Ontario Rail, from 1856\*

— St. Lawrence - Lake Ontario North Shore Inland Rail, from 1854\*\*\*

— Electrical Generation, from 1885\*\*\*

## The Defence of the Land: British Military Activity

— The War of 1812 - 1814\*\*

— Construction of the Rideau Canal, 1826 - 1832\*\*\*

— Fortification of Kingston, 1828 - 1848\*\*\*

— Trent Affair, Fenian Raids, 1861 - 1871\*\*

## Recreation and Conservation

— Early Waterway Recreation, 1830s - 1890s\*

— The Resort Era 1870s - 1940s\*\*

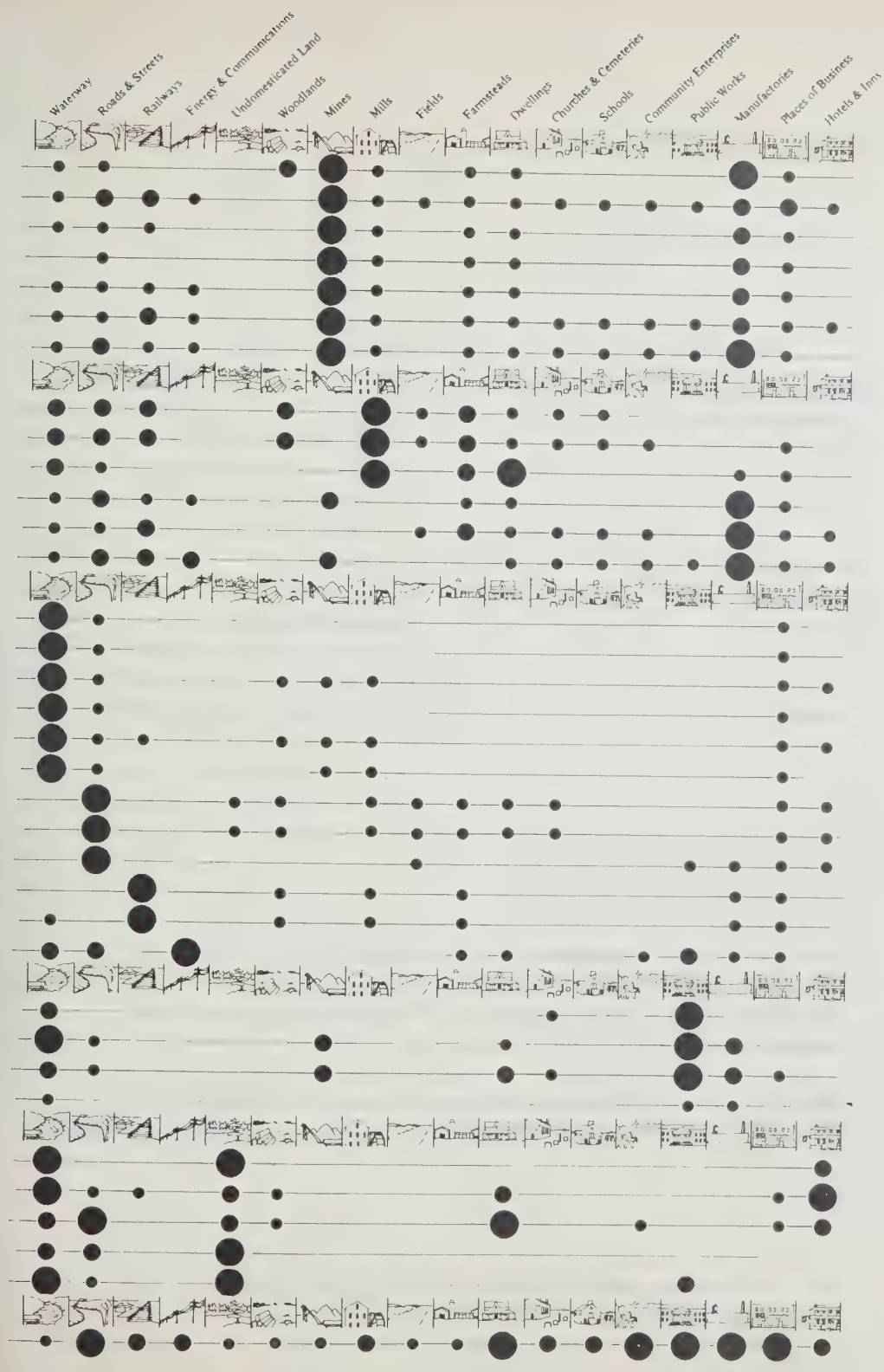
— The Automobile and the Cottage, from 1920s\*\*\*

— Public Parks, from 1920s\*\*

— Conservation Programmes, from 1905\*\*\*

## Urban Development

— Urbanization, from 1810\*\*\*





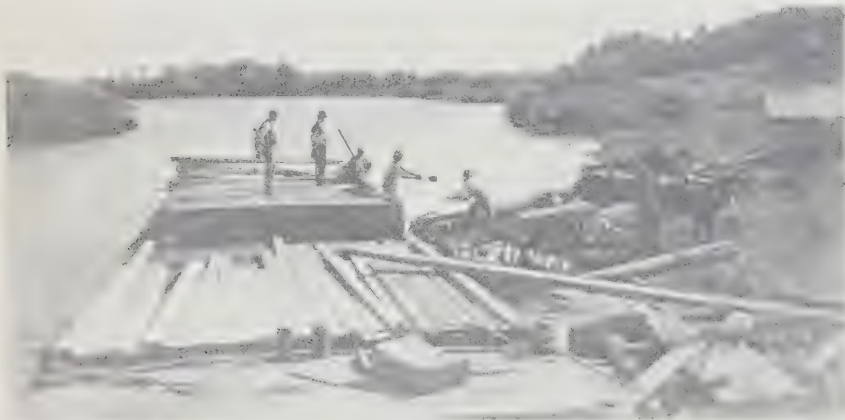
## WATERWAYS

Connecting the regions under consideration are five navigable waterways: the Rideau system, the Bay of Quinté, the Trent system, Lake Simcoe, and the Severn waterway. Their collective impact on the development of the man-made environments in these regions has not been great. As transportation routes, each has had its era of importance overshadowed by subsequent improvements in land transport, both on roads and on rails. The individual waterways were developed and used separately, for different purposes in the past, and even today are seldom travelled con-

tinuously from Georgian Bay to the Ottawa River. Nevertheless, their current recreational use has given rise to an image of continuity that has been reinforced by their consolidation under the management of a single federal agency, Parks Canada, and by their central role in the CORTS agreement. The image has been reinforced in the environment itself by comparatively recent shoreline development that is based on the recreational use of the waterways, a form of landscape development unusual in southern Ontario outside the Canadian Shield. Save for small tonnages of freight handled at Lake Ontario ports within the limits of the CORTS agreement corridor (Belleville, Picton, Napanee, Kingston), the traffic in the waterways is entirely recreational.

The greatest part of these waterways is the natural consequence of the drainage pattern that existed prior to European settlement. The Rideau, Trent, and Severn locks serve primarily to make connections between lakes and rivers that were already navigable, or which were rendered navigable by the raising of their levels by means of associated dams and weirs. The prevailing appearance of the waterways is either pastoral or wild; very few channels have been obviously canalized (examples are the Murray Canal, a portion of the Trent system near Gamebridge, and the Rideau Canal inside Ottawa). The features of the man-made landscape directly associated with navigation on the waterways thus comprise a series of incidents along this chain of rivers and lakes. These are of two principal types: those features associated directly with the control of water levels and the movement of vessels, and those associated with the movement of goods and people between land and vessel.

The most conspicuous water control devices are the locks themselves: 49 on the Rideau, 41 on the Trent and four on the Severn. With the exception of the marine railways at Big Chute (two bathtubs on



10



11

10. Unloading lumber near Keene, Otonabee township, 1880's.

11. Barging on the Rideau at Ottawa, 1920.



wheels carrying one or more boats on an inclined railway) and the hydraulic lift locks at Peterborough and Kirkfield (paired bathtubs similar in operation to hydraulic elevators), all the locks are conventional pound locks with paired gates at either end. In the case of the Rideau, the locks were constructed of stone masonry, with handcranked winches that opened and closed wooden lock gates. The consistent form and function of the Rideau locks testify to the relatively brief time span of its development. Associated with these masonry locks are remarkable stone masonry dams and weirs, the most notable being the arched masonry dam at Jones Falls.

The Trent and Severn locks and dams are of quite varying character, testifying in their turn to the long period of time during which the Trent system was being constructed: from a small lock at Bobcaygeon in 1835 to the opening of the nineteenth-century navigations out to Lake Ontario and Georgian Bay in 1919. The earlier locks were sometimes wood, sometimes stone. In some locations, especially on the Trent River, they were paralleled by timber slides. A number of older locks and dams were upgraded and new ones added in the process of completing the navigation in the earlier years of this century. The series of control dams and locks on the lower Trent River establishes a uniform public works style of its own in concrete and steel in contrast to the earlier stone and timber construction of the Rideau works.

There also exist navigation features that assist and direct traffic on the open portions of the waterways. The earliest lighthouses guiding traffic in Lake Ontario and the Bay of Quinté were built of wood, with oil-fired lamps. More durable stone structures replaced some of these, but the modern versions are either concrete or steel with automatic electric lamps. Marker buoys have been installed everywhere, both near shallow water in open areas and as lane design-



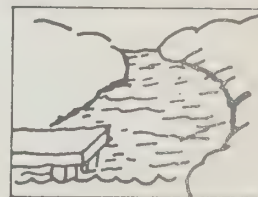
12



13

12. Kingston harbour, undated but probably in the 1920's.

13. Trent waterway lock at Hastings, 1980.

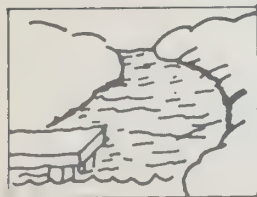




nations in heavily travelled narrow channels. Booms have been installed in some areas to ward boats away from dams and other fixed structures. Rubble breakwaters have been built to supplement the natural protection offered by harbours of refuge adjacent to open water.

14. Kirkfield lift lock on opening day, 1907.

The other principal class of features, associated with boarding or transshipment points, includes docks, wharves, warehouses, drydocks, etc. At its most unsophisticated, a boarding point was simply a beach or shingle permitting vessels with shallow draft to pull up close to shore. This developed into wooden





piers and wharves, or works of stone masonry where traffic and finances permitted. Concrete has superseded these as the basic material in commercial ports. Wooden storage sheds, customs houses, cranes, chandlers' and forwarding agents' quarters, and even the occasional promenade, graced the man-made edge between land and water. Larger ports have grain elevators and shipbuilding yards. Commercial fishing operations required space for nets and equipment repairs as well as facilities for off-loading fish.

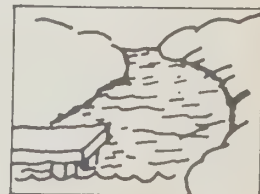
In addition to these fixed features of the landscape, an important aspect of the material history of the waterways is the development and use of many forms of watercraft from the earliest canoes and rafts to the modern motorized pleasure boats and cargo ships. While the development of vessels is outside the scope of landscape conservation, the evolution of watercraft has gone hand-in-hand with navigation improvements. Before and during the era of the fur trade and continuing through the Loyalist settlement, the vessels included canoes, rafts, and flat-bottomed York boats, the latter succeeded by Durham boats. Many early commercial vessels in the canals were long, shallow draft barges, built to fit the smallest lock. They were towed by horses, oxen, or men, with occasional assistance from sails in open water. Steam-powered schooners and tugs navigated the coast between Kingston and Trenton as early as 1819, and on Lake Simcoe as early as 1830. In the era of square timber, the timbers themselves became vessels either bound together in rafts in open water or in smaller skids or as single members in narrow channels and timber slides. Pleasure boats subsequently arrived in the resort areas on the comparatively remote upper lakes of both Rideau and Trent systems. Sailing and steam-powered schooners plied the waters of Lake Ontario and Lake Simcoe as excursion boats. Although private yachts of every size have navigated the waterways for over a century, with the almost total disappearance of commercial



vessels and the spread of interest and opportunity for private boating to all parts of society the number of private boats using the waterways has proliferated rapidly. There have also been many types of dredges used to maintain and clear channels and port areas.

15. East Lake outlet to Athol Bay, Prince Edward County, 1980.

Finally, there is the human use of the water itself. As well as its recreational use for swimming and other sports, the water is a resource for sport and commercial fishing; a power source for milling and hydro-electricity (*q.v.* Energy and Communications and Mills); a public utility water supply and, regrettably, sewage disposal; and even a transportable commodity (the harvesting of ice prior to electric refrigeration).



## ROADS AND STREETS

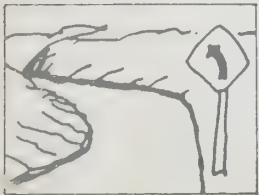
In the regions through which the waterways pass, it is the network of roads and streets, rather than the waterways, that provides both the primary means of access to the land and the primary means of arranging the uses of the land, especially the uses of agriculture and town settlement. These two roles are as true of the rural concession road as they are of the main commercial street of a town, or even of the quiet residential rows of that town. The road itself gives public physical, visual, and aural access to individual property. The pattern of roadways and streets, and the relation of that pattern to the physiography, dictates the arrangement of properties and their appropriate uses. Of the man-made elements of the landscape of southern Ontario, none is more ubiquitous than the rectilinear grids of roads and property divisions laid down by the eighteenth-century surveys. The existence of these grids is especially apparent where there are exceptions: roads whose direction is forced away from the grid because of a pre-existing native route, difficult topography, or the exigencies of modern highway engineering. The importance of the road thus lies in the connections that the road makes between places, the access it affords to adjacent lands, and the patterns of public and private territories it describes in the landscape.

Prior to European settlement, the only overland routes in southern Ontario were walking paths interconnecting native villages and hunting and farming areas, and portages connecting canoe routes. The most widespread physical expression of the colonization of the land in the early years was the surveying and construction of roads. Early roads provided an essential means of communication between concentrations of settlement, an expedient promoting access and settlement in undomesticated wilderness, and a dramatic expression of the British attitude that insisted upon the domestication of that wilderness.

The rural road itself was by no means the most satisfactory means of transportation. The earliest roads were simply trails blazed through the forest, occasionally following Indian routes. But after the surveys the alignments of roads followed the straight paths marked on maps. Since these alignments seldom followed the topography, road building was difficult and relatively costly. The first step involved clearing the road allowance of trees. On many roads, this was a duty of settlement for the occupants of lands adjoining the road. In some cases the building of a trunk road was a government job, undertaken by a corps of the British Army or the militia. After clearing, the stumps had to be removed. The cleared roadway became a deeply rutted track, impassable in wet weather, and only comfortably travelled by sleigh in winter or on horseback in summer.

Since the poor quality of the roads made overland travel difficult and expensive, a great premium was placed on developing agricultural lands close to existing centres of settlement and on the marginally more passable roads. Even in older areas, as late as the 1830's the edge of the forest was still barely a few hundred yards from the road. But by this time the growing settlements began to generate more capital for road improvements. The road between Kingston and Napanee was macadamized in 1839, one of the first to be so treated. Plank roads, consisting of three-inch planks laid on a graded and drained roadbed, were more common but less durable. There were also corduroy roads that consisted of closely laid logs packed into the roadbed. Many roads were unpaved and were only simply graded and reasonably well-drained. Bridges were constantly having to be built, repaired, and rebuilt where there was insufficient money for durable constructions.

By the 1850's, most of the major settlements were connected by stage-coaches. During this time, private companies were franchised to build toll roads and



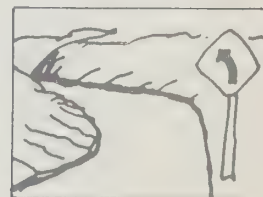


the network began to improve. Fierce competition was sparked as many towns sponsored roads into their surrounding hinterlands as a means of establishing their positions as regional centres. Private pleasure carriages proliferated as the roads improved in the 1840's and 1850's. But bulk transportation by land remained for the most part a seasonal affair, particularly in newly-settled regions; the most efficient bulk transport remained on the waterways until the coming of the railways.

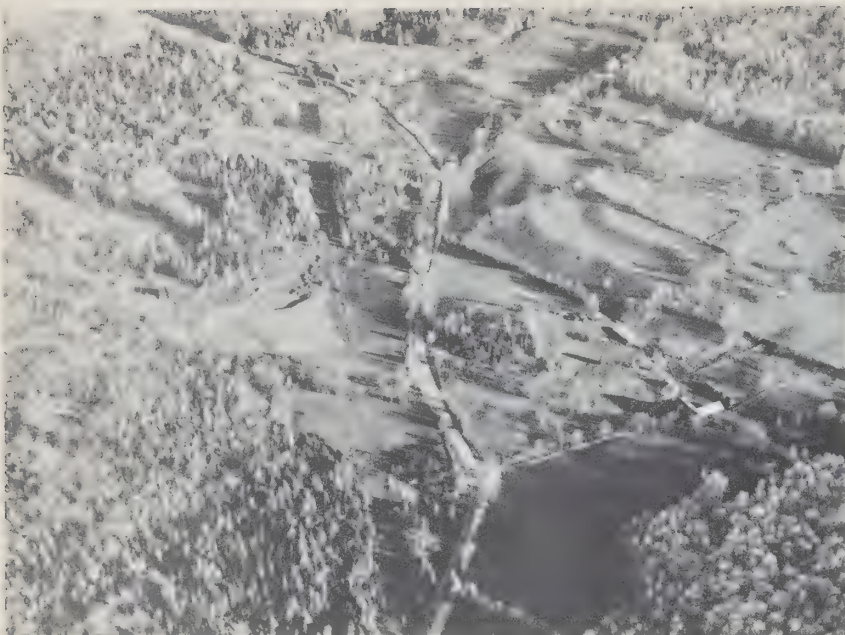
The railway construction boom arrested road improvement. Although main roads had been macadamized, most others remained impassable both in the late autumn and in the spring. Since towns could not rely on roads, the development of those that did not get railway connections atrophied. The state of the roads was not improved until after the rapid introduction of the automobile following the First World War. By 1930, most towns were connected by asphalted roads, although it was well after 1950 before rural roads were uniformly graded and most paved. In the 1950's, four-lane expressways were built to connect Toronto with both the Lake Simcoe and the Bay of Quinté areas.

The elements defining road allowances retain traces of the character of the early roads. Encouraged by provincial assistance that began in 1870, farmers began to plant rows of trees as windbreaks and shelterbelts along the edges of their properties in replacement of the forest that had been almost completely cleared. A characteristic cross-section of a two-laned asphalted or gravelled road between two drainage swales or ditches, inside a road allowance of one chain (66 feet or 20 metres), and lined by rows of trees and fences is found everywhere in these regions. The roads cut across the topography and are more or less straight. Only the oldest roads based on Indian trails, the early trunk roads, and the modern expressways follow routes affected to some extent by the lie of the land.

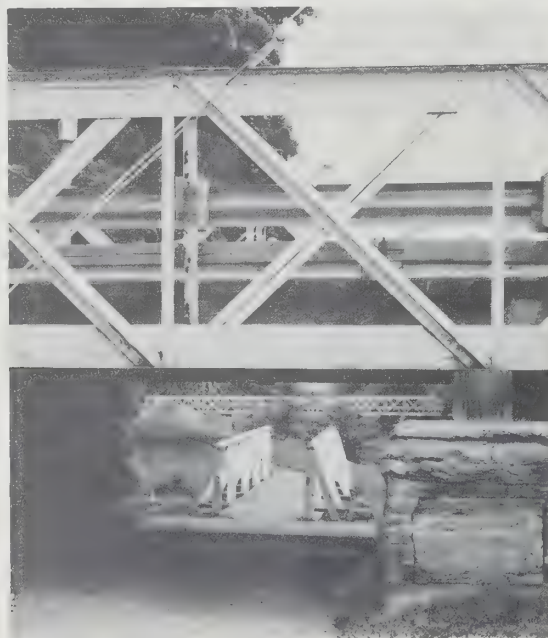
16. Sideroad, Percy township, 1980.



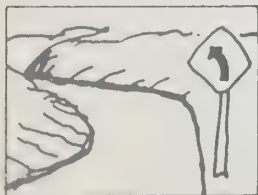




17. Peterborough County road near Stony Lake, 1978.



18. Bridges for foot and vehicle, Perth, 1980.



Since the improvement of rural roads is a comparatively recent phenomenon, the features associated with roads in their modern form and function are themselves relatively modern. The earliest purpose-built filling-stations date from the 1920's, their stylistic evolution since then reflecting a general pattern of changing tastes in North America. Some earlier structures such as stables and smithies have been adapted to automobile use. Roadside diners with their own particular appearance have proliferated since the first automobile and truck traffic began. Roadside billboards have also become part of the landscape devoted to the automobile.

Road bridges developed in the nineteenth century from the first small log bridges to wooden truss spans and stone viaducts, but it is only with automobile-related improvements that road bridge building became extensive. Most such structures are of reinforced concrete and steel. Earlier examples were often masked behind a facade of stone or other masonry. Later examples were designed in a consciously streamlined aesthetic, or with a stripped and minimal functional appearance.

Similar to this story of the struggle of roads for functional as well as formal dominance in the rural landscape is the development of the urban street. Paved streets were also the exception rather than the rule in most towns until late in the nineteenth century. Even if the main streets of the largest and most prosperous towns were paved, their residential streets were often not. Paved commercial streets involved expense both for surface paving and for underground drains. As the town developed, ways and means for providing gas, water, telephone, electricity, and waste-water lines serving adjoining buildings had to be found. Not all of these are underground, and as a result many towns have had to cope with great numbers of overhead wires. To these have been added advertising signs, street lighting (first by gas,

then by electricity), hydrants, sidewalk paving, traffic signals, telephone booths, benches, and even ceremonial planting. One of the legacies of the picturesque suburban taste of the last century has been the presence of massive street trees gracing not only residential neighbourhoods but also even the occasional commercial street (such as in Perth).

The pattern of streets in a settlement flowed from four determinants: the form of the township grid that was its context; the pattern of land ownership in that grid; the way each farm lot was subdivided by its owner for town development; and the topography of the land, especially its drainage. There are many settlements in the waterway regions that are no more than hamlets: concentrations of buildings near a crossroads or a bridge crossing. Real village development only began with the development of side streets and the gradual replacement of large farm lots off the main road by smaller house lots. The sizes of lots varied considerably, as did the pace of development. Often the construction of a railway would provide an attraction for development between the hamlet crossroads and a new station, thus creating a number of building lots.

The dominant pattern of eighteenth-, nineteenth-, and early twentieth-century town development was the orthogonal street grid. In the case of certain towns (for instance Perth) this was by government plan, but most often it was the result of private speculation and subdivision within the generally rectilinear survey grid. Where the orientation of adjoining townships and farm lots differed, or where an existing road did not follow the orientation of the grid, town development had to cope with gores or triangular and trapezoidal lots (for instance at Smiths Falls and Stirling). Waterways and shorelines were primarily responsible for these discontinuities, so that where it might be said that the general survey grid was laid onto southern Ontario wilderness



19



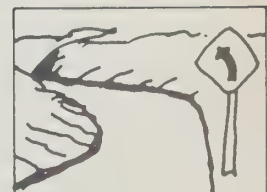
20



21

19. Century Building as garage, Bobcaygeon, 1978.  
20. Parking lot as marketplace, Peterborough, 1979.

21. "Heritage Highway": Highway 2 at Trenton, 1980.







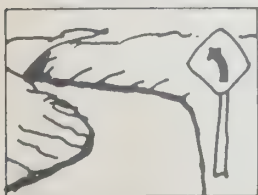
22



23

22. Beckwith Street, Smiths Falls, around 1895.

23. Bridge Street, Campbellford, 1979.



without regard for the character of the land, the form of village and town development was necessarily far more responsive to the topography.

Even within the town grid, there can be many variations. Because of the vagaries of land ownership, the streets created on different farm lots occasionally failed to coincide; even if the grid was oriented in only one direction, local streets might not be continuous. In certain cases, a street might be made especially wide to serve as a marketplace (as at the market in Ottawa), or as the main commercial street serving the prime businesses (as at Smiths Falls and Lindsay). In recent decades, large-scale land assembly and subdivision has combined with a taste for picturesque curves and cul-de-sacs (and specifications for sewage disposal) to produce curved crescents generally following the contours of the land. This contrasts with the earlier grid not only in an obvious formal sense, but also in a more subtle manner: where the nineteenth- and early twentieth-century tracts were developed piecemeal over a long period of time, the new subdivisions are developed almost all at once, with rarely a gap or undeveloped lot. Streets outside the older town centres are now increasingly specialized and designed to suit specific types, directions, and volumes of traffic, in contrast with the pre-existing grid of one-chain street allowances.



## RAILWAYS

The dramatic transformation of the economy of the waterway regions wrought by the building of railways (beginning with a spurt in the 1850's and 1860's, and continuing from the 1880's through to the First World War) produced changes in the cultural landscape in two ways. On one hand, the introduction of a generally reliable, all-weather mode of transport opened up new possibilities for the exploitation of inland regions hitherto accessible only with great difficulty. Railways provided the means for the extension of the sawn lumber industry and for the expansion and intensification of agricultural settlements and markets. They were thus of considerable importance in expediting development and change in man-made landscapes. On the other hand, the railways themselves provided new and different man-made features. Railways must be considered differently from roadways: the operation of railways has not changed nearly so drastically as has road travel.

The rail routes themselves were much more sensitive to topography than were roads. Railway grades needed to be as close to horizontal as possible to maximize the pulling capability of the locomotive and to assure the efficiency of the steam boiler that powered it. In order to provide even grades across land dissected by streams and swamps and punctuated by drumlins and ridges, the railway builders constructed many embankments, bridges, and cuttings (but seldom tunnels). The characteristic steel rails spiked through bearing plates onto timber crossties set in a gravel and cinder roadbed still support trains hauled by teams of diesel locomotives, although here and there rails are welded rather than bolted to one another, and concrete crossties occasionally replace those of wood.

The earliest railway bridges were much like contemporary road bridges, often constructed of wooden



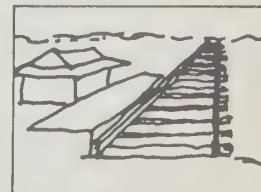
24



25

24. Grand Trunk station, Fenelon Falls, 1889 (re-built around 1900).

25. Rail bridge across the Otonabee River at Peterborough, 1979.



beams on timber-framed bents connecting embankments at either end. With the need for greater capacities and greater spans, the beams became enlarged into timber trusses and the bents into full piers of timber or stone. The modern version of this form uses steel beams on concrete piers. From time to time stone arches supporting the continuous rubble and cinder roadbed were constructed, particularly in eastern regions where good stone and good masons were available. One of the earliest bridge building achievements, although short-lived, was a multi-span structure across Rice Lake that connected Cobourg and Peterborough in 1854. The movement of ice on the lake proved too much for the bridge and the railway syndicate could not afford a more durable causeway across the lake. Having therefore to rely on lake steamers, the Cobourg and Peterborough Railway lost its territorial advantage to a branch of the Port Hope and Lindsay Railway. The remnants of the Cobourg line have survived in the countryside as overgrown embankments.

Other railway lines have also been subsequently abandoned and their rails and ties removed as their numbers decreased due to pressures brought on by the overbuilding of lines of competing metropolitan centres in the nineteenth century and the building

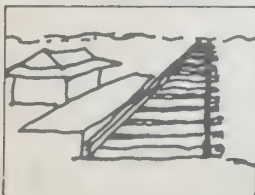
of highways in the twentieth. The other significant change is the consolidation of a number of small railway companies into the CNR and CPR. The distinctive character of the early companies' buildings, especially their stations, has often disappeared in the process of rebuilding and modernization undertaken by the existing railway companies, whose strong operating and development powers are authorized by federal statute.

Buildings associated with rail lines include freight sheds, workshops, locomotive roundhouses, and passenger and freight depots in the communities on the line. Stations, as the most widespread and conspicuous manifestations of the considerable capital investment required for railways, were designed and built with a conscious effort at impressiveness. In the eastern regions, some stations were built in stone with sheltered platform areas under broad eaves. Brick and frame stations also abounded, many presenting a wealth of decorative ornament. The basic elements of the station included one or more waiting rooms, offices for station manager and telegrapher, a ticket counter, a baggage room, and space for the train dispatcher, which last accounted for the bay window at trackside in most stations. At Kingston and Belleville the stations were sufficiently busy to have required a second storey.

Other elements of the railway landscape included the ubiquitous telegraph poles and wires, water towers and coal bunkers for the steam locomotives, and great numbers of signals and signal boxes. Although many of the earliest features including station buildings have disappeared, some older elements have been adapted or modernized. No new railways have been built since 1915.

As for the locomotives and rolling stock, almost all of what is in service now is of recent vintage; the older vehicles have been wrecked or put in museums.

26. Freight depot at Brighton, 1979.





## ENERGY AND COMMUNICATIONS

The routes of energy and communication are for the most part more tenuous than the waterways, roadways, and railways of these regions. Indeed, only in the case of electrical transmission are these cross-country routes tangible or visible. Most energy and communications features are isolated elements in the landscape.

The completion of the continuous Trent/Simcoe/Severn waterway in the early part of this century provided the system not only with a new series of dams and locks, but also with the potential for a new industry: the generation of hydro-electricity. Several hydraulic generating stations were erected, each associated with an existing waterfall. Some were built by private companies in conjunction with the federal government's completion of the Trent and Severn navigation improvements; most of these have been taken over by Ontario Hydro. There remain, however, several independent stations, such as those at Campbellford and at Trent University on the Trent system, and at Jones Falls on the Rideau waterway. Hydraulic generating station sites include the main building housing the turbines and generators, works to control the level and flow of water, penstocks or canals to direct the water to the turbine, switching equipment and transformers to boost the voltage for transmission, and wire conductors. At this time there is only one generating station in the waterway regions which is not hydraulic. Lennox GS, on the Bay of Quinté, is an oil-fired station that generates many times the electricity produced in all the other stations combined. In the earlier generating stations there was a deliberate effort to provide a highly visible and impressive container for the machinery within, using architectural forms similar to major public buildings in towns. At Lennox, impressiveness has been achieved through sheer bulk.

The high voltage transmission lines crossing the countryside on towers of steel lattice and lower voltage lines on wooden, concrete, or metal posts are the most ubiquitous manifestations of the electrical grid. These come together at transformer stations in a maze of wires and insulators. Some smaller

27. Seymour generating station, Seymour township, 1977.



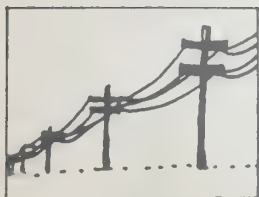




28. Defence communications site, near Consecon, 1979.



29. Rural airport at Kars, Osgoode township, 1980.



distribution points in built-up areas have been made in the image of their surroundings, imitating houses or small institutional buildings.

Located throughout the countryside are other isolated towers, in most cases supporting microwave equipment linking together telephone and telegraphic networks. Other towers provide locations for commercial radio and television transmission, and yet others provide for government radio/telephone communication. In town, the actual offices and control centres of these systems may inhabit structures built purposely for them, or they may be in adapted buildings.

Small airports have been a notable feature in the landscape since the 1920's. Aircraft have proven important in modernizing agriculture (crop seeding, spraying, and soil surveying) and forestry (species surveying), and landing fields have been located throughout the waterway regions. Commercial travel along the waterways has been better served by the road network, although many air routes into Ottawa and Toronto pass over these regions. Small planes, like small boats, have become more accessible to many groups in the population, and small hangars, control buildings, and wind socks are evident along several roads near waterways.

A further class of related features includes oil tanks, gas holders, pipeline terminals, and pipeline valves. Most of the oil and gas distribution system lies in underground pipelines, which are only evident where their property easements cut through wooded areas or where pumping stations have been built. Of considerable regional economic significance are those physically unremarkable industrial locations where the bulk rail and pipeline system supplies tanker trucks for the local market for gasoline and heating fuel.

## UNDOMESTICATED LAND

Undomesticated land falls into three sorts: the wilderness that existed before the eighteenth- and nineteenth-century lumbering and settlement; the wild lands, such as bogs and swamps, which were generally unmanageable by man; and the waste lands that were exhausted by human exploitation and then abandoned. Of these classifications, only the wild lands and the waste lands remain today. The wilderness, as such, disappeared (to become woodlands, fields, and settlements) as soon as the direct exploitation of the land became more important than its preservation as a habitat for fur-bearing animals. Wilderness was in part a physical landscape type and in part an attitude of the new inhabitants: as settlement progressed, what was considered wilderness retreated further and further from settled areas.

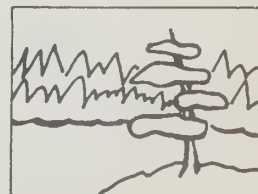
The character of the wilderness through which fur trappers and traders travelled and plied their trade just before European settlement was well documented, both in travellers' accounts and in the notes of the early surveyors. Most of the waterway regions were dense forests, with a great deal of pine near the Laurentian Shield and mixed deciduous tracts to the south, but some areas on lighter soils (such as those south of Rice Lake) were grasslands with occasional clumps of trees. Watercourses large and small crossed the forests, making overland travel difficult. Settlers tended to regard the dense forests with antipathy, since the trees had to be cut down and the stumps removed before the soil could be made to produce sufficient crops to earn a living beyond bare subsistence. Loggers on the other hand regarded the trees as their crops, although they were to be harvested only once. The last exploitable virgin wilderness had disappeared from the waterway regions with the forest exploitation and settlement of the southern tier of the Shield in the Severn area in the 1860's.



30. A picnic near Ottawa, 1891.

What remained after the extinction of the wilderness were two kinds of land: that which was used by man, and that which was not. The unmanageable wild lands that were left over included lowlands, marshes, bogs, dunes, and rock outcrops. Because these features resisted access and because they produced little of use for settlement, they were for the most part bypassed by development until this century. Unmanageable wilds still exist in isolated areas, although some of this sort of land has been reclaimed or brought into some recreational use. An important example of reclamation for productive purposes is the Holland Marsh.

The remaining wilds consist primarily of swamps and bogs. Large tracts of rocky shoreline in the Shield areas remained relatively undomesticated until the influx of recreational development, first in the form of resorts, subsequently in the form of individual cottages and public parks and conservation areas.



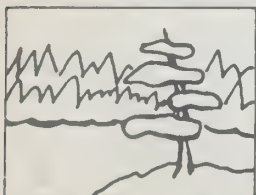




31



32



31. Viewing the wetlands, Outlet Beach Provincial Park, 1980.

32. Farm abandonment, North Burgess township, 1977.

But most of the land that currently resists all uses but recreation is land already exploited for forest or agricultural activity and subsequently abandoned. Some areas farmed in the nineteenth century were literally used up. The soil, stripped of its pre-existing forest cover, in a few years rapidly lost its fertility and became useless for crops. But the largest area of wasteland was produced by the forest industry, particularly on the Laurentian Shield. Selective removal of the best pine stands for square timber left behind piles of waste that inevitably fed forest fires, which eradicated in their turn the remaining trees. In the sawn lumber trade almost every tree was cut, leaving behind a denuded terrain. Provisions for new planting did not exist. The consequent flooding and soil erosion destroyed the capability of the land to grow new crops of trees, so that its continuing exploitation was stifled. The trees that have grown in the interval since large-scale lumbering are tiny specimens compared with their forebears. What is now a rocky landscape with small pockets of soil was once a far more fertile terrain.

Overly ambitious and poorly conceived agricultural practice also shared in the production of the derelict wasteland of these regions. Where the soil was heavily exploited for commercial wheat growing year after year, its fertility was rapidly exhausted; and where the soil was too thin to support continued cultivation it washed away. Expenditures necessary to revitalize these worked-out lands have been only justifiable where such lands are close to ready urban markets. Thus there has been considerable farm abandonment in more remote areas. There remain abandoned houses and farm buildings, with fields sometimes overgrown or at other times still in marginal use as pasture.



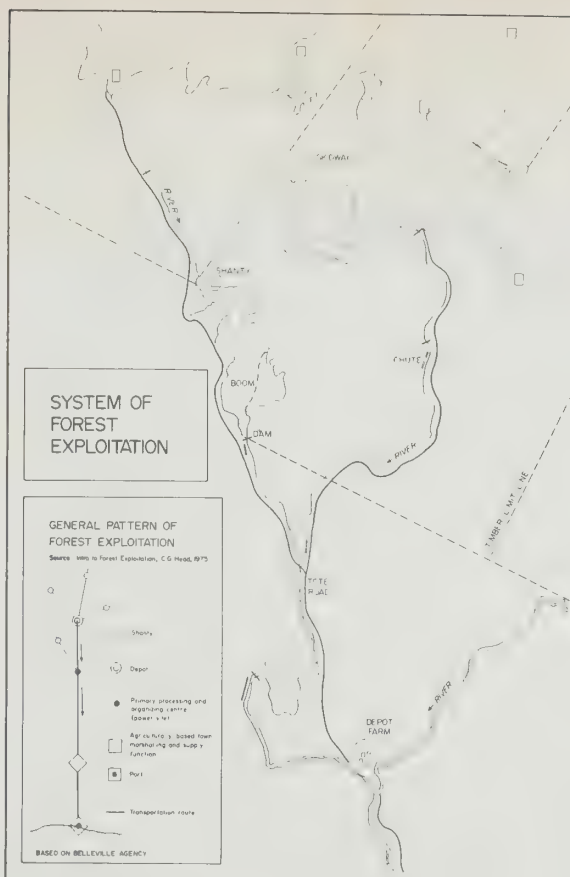
## WOODLANDS

Once the waterway regions had been surveyed, and the mercantile system for the export of timber and sawn lumber was in place, any part of the unsettled forest accessible from the waterways (almost all of it) became potentially productive woodland. While the system of forest exploitation prospered over many decades, in most cases the means of this exploitation disappeared with the forest itself.

First of all, in their general physical appearance there may not be much to distinguish between woodlands and undomesticated lands, for in practice much undomesticated land is wooded. In speaking of woodland here, we are not describing a type of landscape so much as a type of land *use*, which exists for only a short period of time during which the wood becomes a harvested crop and after which the region reverts to waste or wild land. Just as the wilderness covered all of the waterway regions before 1783 but disappeared in the succeeding decades, woodland is also a transient feature, existing only so long as lumbering is a productive use of the forested areas.

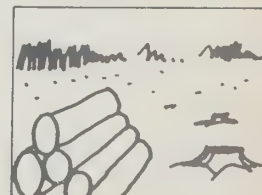
The first use of the woodlands was for building materials: logs and planks for rough shanties, fences, early houses, and barns. The burned waste and stumps provided ash for potash (used for soap manufacture), often in saleable quantities, giving the early farmer his first cash crop. The creation of the export market for squared timber after 1812 gave the forest an economic significance far outweighing its nuisance value to the farmers. This significance became more diversified as the export trade for sawn logs overtook and surpassed the square timber trade in the 1860's.

In the timber trade lumbermen were hired for the winter and brought into small outposts centrally



33. Forest exploitation.

located in forest tracts. From there they were posted to encampments simply referred to as shanties. These provided rough dormitories, cookhouses, and storage sheds, and would be moved constantly about in the forest. Timbers were felled and squared on the spot, then dragged by teams of horses or oxen to major streams. In the spring the timbers were assembled into rafts and floated downstream. The rafts had to be disassembled at narrow rapids or at lock stations, either to be sent through the rapids or locks in smaller assemblies, or sent down timber slides as skids. The large rafts were reassembled at major ports and floated down the Ottawa and St. Law-





34



35

rence Rivers to the export point at Quebec, where they were loaded for shipment to England.

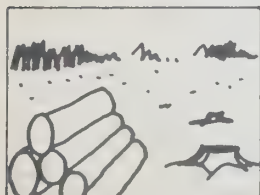
In the early years of sawn lumber, the initial means of exploitation was similar, with the waterborne logs taken for sawmilling at downstream centres like Lindsay, Peterborough, Ottawa, and Trenton. But the real difference at the zenith of sawn lumber was the use of railways to provide year-round transport, and large steam-powered mills closer to the forests at places like Fenelon Falls and Bobcaygeon. In the early years only the cutting and dragging of timbers took place in the forest, but later the production of sawn lumber itself was moved into the woodland areas in mills fuelled with waste wood.

The forest production of the nineteenth century was not managed skillfully. There was no replanting, the soil was washed away, and the frequent fires destroyed both remaining young trees and seedlings. In the twentieth century some woodlands have been systematically replanted under government auspices to provide for forest harvesting in the long term. Such conservation efforts are characteristically ordered, with regular grids of trees and carefully managed undergrowth. What sawmilling persists is of very small scale, based on the harvesting of small woodlots scattered throughout the marginal agricultural areas. Little harvesting takes place at present in the waterway regions compared to a century or more ago, but the network of transportation and service centres built to support woodland exploitation survives in large part to serve the tourism industry.

Thus it is that many areas within the waterway regions, in which the second and third generation of forest growth are regenerating, may yet become productive woodland once more, although their present appearance may be indistinguishable from what was previously described as wild, undomesticated land.

34. Lumbering in the 1890's.

35. Woodlot harvesting near Peterborough, 1979.





## MINES

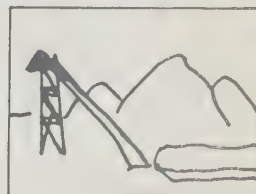
Mining is an isolated activity, with many of its technical aspects varying from site to site because of the varying terrain and the nature of the mineral being exploited. Minerals have been mined from deep shafts, shallow shafts and drifts (or adits), small pits, or extensive quarries. With mines more than any other activity there is a direct relation between a specific mining sub-theme and the form taken by mining activities.

The largest single mining operation in the waterway regions has been the open-pit iron mine outside Marmora. Although iron mining and smelting at Marmora date back to 1823, the modern pit dates from 1950. The huge pit contains a road spiralling down to a continuous blasting and digging operation near the bottom. Associated with the pit are buildings housing ore crushers as well as facilities for loading ore into hopper cars for shipment to lake carriers.

Other operations have been of much smaller scale. Large headframe works for mine hoists signified the existence of deep shaft works, but the majority of mines were shallow shafts or pits, with ore hoists being rather more temporary. Waste dumps and piles of tailings from ore processing were integral parts of the mine site, as were certain kinds of workshops with specialized equipment for separating ore from waste. Early mining was powered by steam produced by boilers in other buildings on the site: the power was used to operate hoists, to pump the shaft or pit dry, and in some cases to power drills. After the late 1880's, electricity or compressed air produced off the site began to replace steam. Gasoline-powered reciprocating engines also came into subsequent use. Transport around early sites was usually by means of barrows and carts, but larger operations had wooden skipways or iron trolley rails replacing the rutted dirt tracks.



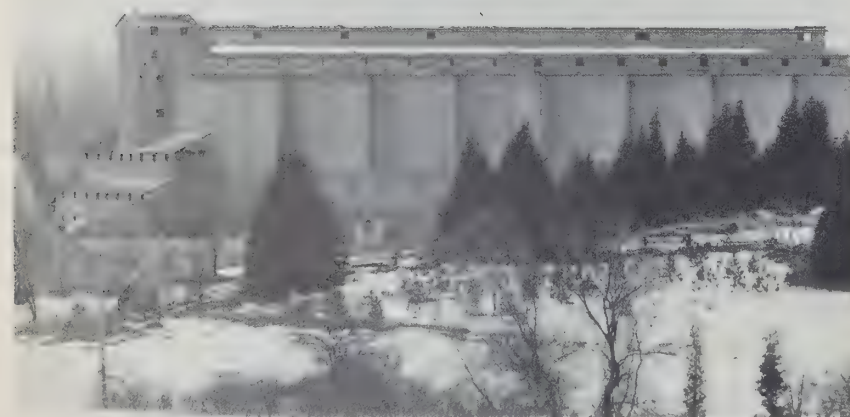
36. Abandoned mica mine, Murphy's Point Provincial Park, 1980.







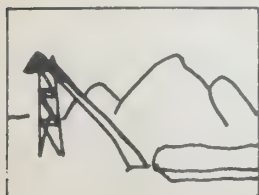
37



38

37. Gravel and sand extraction near Lakefield, 1979.

38. Abandoned cement works at Lakefield, 1979.



Buildings were usually rough frame structures, built cheaply to provide minimum shelter. The great investment in mining was not in the buildings, which seldom survive many years after abandonment, but in the equipment, power supply, and transportation. Only where the quality and quantity of the ore justified the erection of a relatively substantial processing plant (as at Port Elmsley for graphite) were the above-ground works of any durability.

Perhaps more significant in the landscape because of their ubiquity are sites where building materials have been extracted. Limestone and sandstone blocks for engineering works and buildings have been quarried in several areas near the waterways, especially near the Rideau and at Point Anne. The limestone has also been ground down and baked in various forms of kilns to produce lime for cement, producing in some cases huge works such as those at Point Anne and Lakefield. The naturally sand- and gravel-bearing drumlins and eskers have been used for building material extraction as well. Associated with these pits and quarries are rock crushers, machinery for sorting grades of sand and gravel, and piles of processed material ready for transportation.

The extraction of sand, gravel, and limestone was widespread and of small scale in early years, but became more concentrated at specific sites with increasing industrialization and reliance on railway transport. The extraction of clay for brick production has been similarly concentrated. While many rural houses were built with bricks made on the site, transportation and production improvements expedited the centralization of brick making to established urban centres and their concentration into factory complexes.

## MILLS

The word mill is often used broadly to describe machines or buildings used for all sorts of industrial processes. In these notes, a mill is a building type differing from the manufactories described subsequently in that it houses the processing of agricultural and forest staples into semi-finished goods at locations close to the origin of those staples. Mills are distinguished from factories by their small size, their general reliance on water power sites, and their non-reliance on major transportation developments.

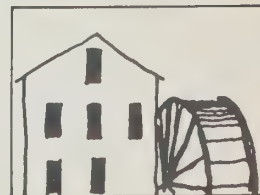
The very first mills were portable hand-operated gristmills, often provided to the earliest settlers by the government. Larger animal-powered versions appeared soon after. With the immensity of the settlement task and the shortage of farm labour, the mill as a building type came into its own. The mill took over some of the domestic functions of agricultural settlement, freeing the settler to clear his land and build his house and farmstead, and providing him with a means of marketing his produce in order to raise his living standard. In at least one instance, at Kingston Mills, the colonial government erected such a mill as an encouragement for settlers.

Water-powered mills transformed grain into flour and logs into boards as well as assisting the domestic transformation of wool into woven cloth. Water power sites were exploited by controlling the flow of water with dams and weirs and directing this flow into an excavated channel or constructed chute. The water turned a large wheel, which in turn propelled a reciprocating or circular saw, operated grinding stones, or powered machinery for cleaning wool (carding) or softening roughly woven woollen cloth (fulling). The mill wheel may have been built of wood or occasionally iron, or a combination of both, but many wheels were replaced by smaller and more efficient turbines later in the nineteenth century.



39. Fowlds' grist mill at Hastings, 1870.

40. Mossom Boyd's sawmill at Bobcaygeon, undated but probably in the 1880's.



Wheels may have been outside the earliest mill structures but they were brought inside for protection from the elements (especially ice) in more advanced operations. The feature distinguishing a turbine-powered mill was one or more penstocks: wooden or iron tubes directing the water under pressure to the turbine. Some of these mills were converted from direct operation of saws or grinding stones to the generation of electricity for use in the vicinity.

The buildings themselves varied considerably in material, although in general most gristmills were of heavy timber framing similar to large barns, or of brick or stone, since the weight of the grinding stones and other machinery placed great strains on the building structure. Carding and fulling mills for woollen production needed to be of similar heavy construction. Sawmills, on the other hand, were often built out of the framing lumber they cut. However, inasmuch as the basic power source was similar,

early mills were sometimes interchangeably used for different purposes over their lifetimes.

Because of the durable nature of grist and woollen mill construction, some mills were constructed with an eye to somewhat more than the basic functional programme for the building. Windows and doors were arranged according to Georgian or Victorian notions of proper proportions. Decorative moldings in moderation were not uncommon. Stone mills may have had rough-cut or rubble walls in some cases, but properly dressed corner stones or even bricks were used as quoins. The retaining plates of iron tie-rods used to brace stone walls were additional decorative elements. The grist mill was inevitably the dominant building in its locale, providing a strong visual focus, a place of employment, and a centre of food supply. Sawmills may have been lighter in construction but not necessarily less distinctive, since they often displayed, in structure, windows, doors, moldings, and signs, the very commodity they produced.

A brief note on the relation of mills to town settlements: in most, but not all, cases we find urban areas than can be traced historically to the existence of an early grist or saw mill. The earliest mills were significant as places to market produce in exchange for imported supplies, for the mill was necessarily located not only at water power sites but also advantageously in terms of land and water transport. Nevertheless, these mills were eventually far more widespread than town settlement, so that there are many mills for which associated settlement was very small, often limited to the dwelling of its operator. Although the greatest number of mills originally existed in areas now urbanized, urbanization itself has often eradicated those mills, so that most remnants lie outside the urban areas.

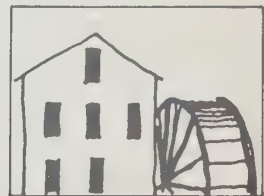
41. Co-op mill at Peterborough, 1979.







42. Purdy's mill at Lindsay,  
1977.



## FIELDS

Fields, both in and out of production, dominate the appearance of the waterway regions. The countryside is primarily agricultural, and this agricultural landscape provides the context within which most of the classes of features discussed in this paper appear. Only where the waterways touch the Laurentian Shield — in the upper Rideau region, in the Kawarthas, and along the Severn — does the agricultural dominance give way to woodland and wasteland. The brief note below describes the field as an element in isolation from other features; the discussion of the agricultural landscape as a context for all these features will follow.

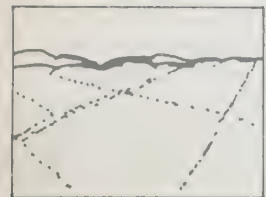
The basic pattern of fields was determined by the surveys, which also located the roadways on the land. Fields originally appeared as an irregular swath centred on the road cut through the forest. In some cases fields and farmsteads were simply small, isolated incidents along a forest road. Since farms in a given area were established over a period of years, the appearance of individual fields varied considerably. Stones and stumps littered the landscape, removed only when time and machinery were available. Stumps were often left to rot over the years, eventually to be plowed under or more easily removed (stump-pullers were not commonly used until the 1870's). Fences were built to keep animals in their pasture (and out of the crops), using both stones and stumps in addition to split cedar rails in various patterns. Fences were portable, to be moved as fields were enlarged and plowing practice altered. As the forest gradually disappeared, the fields themselves gained an appearance much closer to their modern-day look. Many fences were made permanent as straight wire came into use for fences in the 1860's and barbed wire followed in the next decade. But by the late nineteenth century the landscape had been in large part stripped of all trees except for



43



44



43. Rough pasture on thin soil, North Burgess township, 1980.

44. Rolling drumlin fields in Percy township, 1980.



small orchards. With the fixing of field configurations, the government encouraged the planting of tree rows for wind shelter and of woodlots for domestic fuel and construction needs and even maple sugar production.

The appearance of the fields themselves later in the nineteenth century was especially uniform. Farmers virtually “mined” their fields to produce wheat for commercial use. This practice devastated soil fertility and by the latter part of the century the land that was not completely overworked was taken into less intensive mixed and rotated cropland. Fields



46

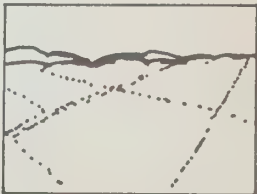


were now occasionally left as fallow or pasture as part of a cycle of use and rest.

46. Packing apples near Brighton, 1923.

Most of the agriculture in the waterway regions is mixed feed cropping and pasturage. Notable exceptions are the highly intensive muck farming areas in the Holland Marsh, the greenhouse food and flower producers near major towns, and fruit and vegetable farms in Prince Edward County. Many fields overworked in the nineteenth and early twentieth centuries have been abandoned, but some are still used for pasture for cattle and sheep. Garden crops and orchards have also been essential elements of most agricultural holdings, providing farms with a high degree of self-sufficiency in basic foods and sources of small amounts of additional farm income.

45. The grid is seldom even; Athol township, 1980.



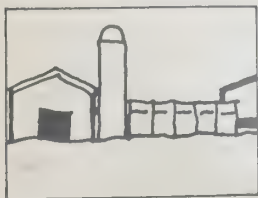


## FARMSTEADS

While the word “farmstead” may have connotations applying to the entire farm landscape, it refers here to the buildings used in farming activities. The most notable of these is the barn, which in the waterway regions spans a continuum from small log shed to prefabricated multi-level chicken ranch.

The earliest barn likely had been the settler's first log shanty, rendered obsolete for human habitation by a more substantial log dwelling (which in its turn might become a barn when a yet more substantial house was built). But inevitably a larger, purpose-built structure was required for animal shelter, feed and equipment storage, and grain threshing. In contrast to some European preferences, the barn was almost always separated from the house. The barn was built on a rubble or masonry foundation that occasionally rose up to become a first-storey wall.

47. The incremental growth of a farmstead is in plain sight near Burritts Rapids, 1980.



The walls might be built of horizontally-laid logs, or of heavy timber framing clad in vertical boards, and the roof covered with boards and shingles. Occasionally, the whole wall structure was stone. The most common, two-bay, type of barn was relatively long and narrow, with large doors in the centre of each long wall, a hard-packed drive floor in the centre, and a storage bay at either end for livestock, hay, or grain. This type was simple to build and ideally suited for wheat farming. Other elements of the farmstead included root cellars, wells, feeding and watering troughs, and livestock pens.

But with the diversification of agriculture late in the nineteenth century, farmstead requirements become more complicated. The housing of livestock became a major consideration. On modest farms other barns might be added, making an L- or U-shaped courtyard. Newer single barns were much larger with two floors: the lower one for livestock and the upper one, accessible by means of an earth bank, for equipment, feed, and hay. Subsequently, cylindrical silos, first of iron-reinforced wood and then of concrete or steel, made their appearance and greatly simplified feed grain storage. Some woodlots contained small sheds for maple sugar operations.

The introduction of prefabricated metal building systems, balloon framing, the gang-nailed lightweight wooden truss, and electricity has changed the basic appearance of barns and other structures to low-profile, sprawling, single-storey buildings. The farmstead is now a complex of specialized buildings, one for each purpose. Egg production has been industrialized into single-purpose structures, as has been dairying. The storage and maintenance of tractors and other mechanized equipment has required additional buildings, as has manure and fertilizer storage.



48. Harvest time, Hallowell township, 1980.



## DWELLINGS

The house is everywhere in the landscape, so that every house is the centre of its own landscape. The house satisfies a functional programme, protecting its inhabitants from the elements in all seasons, no matter how severe. It also provides its inhabitants with means for expressing their taste and their heritage. It originally housed social and economic functions for which a number of specialized building types have since emerged. It is the most common and widespread building type, yet its functional development has been studied far less than its stylistic evolution.

The basic types of house construction in these regions are not numerous. The oldest is horizontal log construction, adapted from Sweden via the northern American states. At the corners the logs were keyed, notched, or dovetailed into one another, and the chinks filled with clay. The roof was of bark or wood shakes on handhewn planks, resting in turn on a ridge pole and rafters. The floor was earthen or plank. The windows were small: glass was expensive and hard to get. The smallest houses had one room, but many were built quite large, although limited to one or one-and-a-half storeys. Many substantial log houses still exist in disguise, clad in boards or brick. A variant of this form is the shanty built of square timbers, using similar techniques of construction.

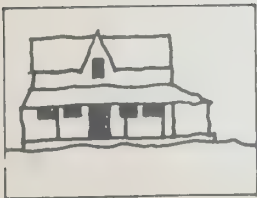
Stone construction was more sophisticated, calling for skill in the quarrying of the material as well as its connection to the timbers that framed the roof and upper floors. Where the most self-consciously architectural expression commanded by an unadorned log house might lie in pleasing proportions and a well-built chimney, masons and carpenters could conspire to produce fine Georgian or Victorian facades and details. Windows and doors in both well-to-do and more common houses were built accord-

ing to designs taken from widely circulated pattern books.

The basic skills in stone and woodworking came with the earliest settlers. Artisans quickly overcame tendencies to slavish imitation and before long produced houses and details unique to southern Ontario, adapting a number of foreign and domestic precedents. The stone house and later types also possessed basements, necessary for proper foundations and eminently practical for domestic work and storage space.

Houses of brick exterior became the most common type in both town and country. Like stone, bricks possessed the advantages of solidity and fire resistance at much less expense, and provided opportunities for bright colour and pattern on outside walls. While some brick houses were of solid masonry similar to stone construction, most were in fact frame houses with brick veneers. The increasing production of sawn lumber and plentiful machine-made nails permitted the cheap and rapid erection of such frames. In addition to brick exterior cladding included vertical boards and battens or horizontal clapboard. More recent coverings of insulbrick or metal siding almost invariably seek to imitate brick, stone, or wooden facing.

The frame has remained the dominant constructional type up to the present. Other, more recently introduced, techniques have included the substitution of rusticated concrete block for stone (popular in the 1910's and 1920's, especially in the Rideau region where the substitutes were known as Boyd blocks), the incorporation of structural concrete in foundations and basements, the substitution of steel studs and joists in place of wood, and the use of asbestos shingles instead of slate, tile, or wooden roof coverings. Reinforced concrete has seldom been used for single houses, but it is in common use for modern multi-storey mass housing or for institutional housing.

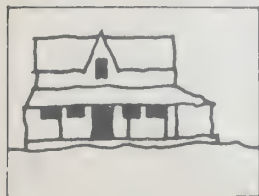






49. Lally homestead, Murphy's Point Provincial Park, 1980.





50. Hutchison house  
(1837), Peterborough,  
1979.

In addition to keeping out wind and rain, the house must also provide warmth during the severe Canadian winters. In the earliest log houses a fireplace of clay-covered timber, or stone, or later brick provided for heat, cooking, and some light. Later, more substantial houses used brick chimneys, either in the center or at either end of the house. While the former seems to make more sense in retaining heat, outside chimneys were common because they provided substantial structural stability. With the lighter and less well-insulated frame houses, several wood-burning stoves provided more comfort. From here it was a small step to providing central heating from a wood- or coal-fired furnace (later oil or natural gas) either through the medium of warm air circulation or hot water radiation and convection. Domestic electrification in this century has provided another, albeit expensive, heating source.

House plans of southern Ontario in general and of the waterway regions in particular have not been thoroughly studied. They are nevertheless of great potential in illuminating our understanding of domestic attitudes and practices through time. The first log shelter had but one room, accommodating cooking, eating, sleeping, handcrafting, and entertaining. The working life of the modest home remained centred on the kitchen, even as growing affluence enabled the separation and specialization of bedrooms and parlors. The most affluent houses possessed a series of "public" rooms for the purposes of ostentatious display and entertainment. The porch became popular after the middle of the last century as an extension to the parlour, placed as it was on the other side of the house from the heat and commotion of the kitchen: parlour inevitably at the front, kitchen in the rear, often in a single-storey "tail". Room arrangement determined plan; plan dictated the elements of the elevation; stylistic convention and taste dressed the facades. Domestic architecture became a matter of balancing aesthetic and functional norms (win-



dows centred or symmetrical in each room's outside wall) with the individual's particular wishes (centre hall?; side hall?; no hall?). In the early part of the nineteenth century these choices had been limited by the compactly rectangular plan that depended on fireplaces for heating purposes. Later, the planning freedom provided by Franklin stoves, the light timber frame, and the picturesque late Victorian aesthetic permitted house plans of more varied shape and function, from simple "L" to rambling mansion. This also had the fortunate effect of legitimizing aesthetically the additions to earlier houses required by improved living standards, technology, and larger families.

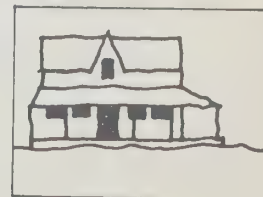
Subsequent house building has rationalized the exuberance of the late Victorian era, not the least because of consideration of central heating. Despite the almost complete rejection of two-storey plans for single detached houses after 1945, and the use of styles taken in pastiche from almost every corner of the western world except southern Ontario, the basic organization of modern houses can be traced directly to social and technical considerations worked out since colonization began. Prefabricated mobile homes, a newly imported type, intrude into this evolution, but even these acquire features and additions identical to those of the other new dwellings.

Up to the point where urban conditions require densities that preclude single detached houses, there seems to have been little difference between town and country houses, either in terms of function or taste. While farm sites did provide considerable potential for arranging the house to face the most desirable direction in terms of sun, wind, slope, and view, the country house almost invariably faced the road. Aside from the obvious benefits of higher ground, house siting was much more a social than an environmental response. A farm house might have



51. Bobcaygeon, 1978.

52. Hastings, 1978.







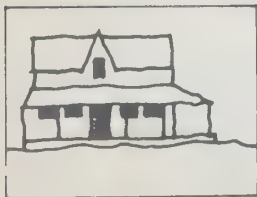
53



54

53. Barrie, 1906.

54. Peterborough, 1979.



been close to the road or far from it (the distance almost always consistent on any given stretch of road), but it faced the road. This was also true of town houses, even where not required by narrow lot dimensions.

The question of style has been extensively treated in many works on Ontario architecture, and the water-way regions do not vary greatly from their surroundings in terms of the evolution of domestic style. The Canadian Inventory of Historic Buildings has generated a listing of dwelling styles that satisfactorily covers the period up to the First World War:

- Georgian tradition (prior to 1820);
- Neo-classic (circa 1810-1830);
- Regency (circa 1810-1840);
- Classic revival (circa 1830-1860);
- Gothic revival (circa 1850-1870);
- Picturesque revival (circa 1850-1870);
- Italianate (circa 1850-1870);
- Renaissance revival (circa 1860-1875);
- Second Empire (circa 1860-1880);
- Romanesque revival (1880-1910);
- Beaux Arts (circa 1880-1910);
- Queen Anne revival (circa 1885-1900).

This list could be extended into this century by adding further revivals (of revivals) into the 1920's, derivation of Cape Cod, Tudor, and Spanish features from 1910 to the 1950's; a rather modernized folk cottage style with porch (promoted and occasionally built by the Ontario government) from 1919 to about 1930; the International flat-roofed and horizontal window style reaching Canada by the 1930's; the sprawling ranch house bungalow style beginning after the Second World War; the eclectic "interchangeable feature" style of tract houses beginning in the 1950's; and the cedar shake chalet style of the 1960's and 1970's. There are exceptions to these categories in the form of atypical architect-designed

houses for the well-to-do, dating from the 1930's, but their numbers are few.

A single detached dwelling of special importance in the waterway regions is the cottage or summer home, made practicable for the city dwellers by the power boat, the automobile, and the development of good roads. Cottages are often self-consciously "woody" and of light construction, although the increasing interest in winter recreation has led to the insulation and winterization of many erstwhile summer places. The overwhelming preference for cottage locations on the water's edge has tended to give many navigable waterways a conspicuously suburban appearance, even where there is no development beyond the shoreline itself.

While the single detached house is numerically dominant, there exist other forms of private dwellings, particularly in the larger towns. These include row houses or terraces, which date back in some cases a century or more; flats above commercial premises on main streets; walk-up or garden apartments; and high-rise elevator apartment buildings. A special instance of a privately planned development of single and double dwellings, a form quite rare in the province, survives at Batawa.

Institutional housing of several kinds has also been built in the waterway regions, at the behest of individual entrepreneurs, philanthropists, local communities, or agencies of government. Examples include orphanages, retirement homes, and religious retreats. These may be found in large dwellings or mansions converted to new occupancy or in new buildings constructed for that purpose. One of the more notable examples of such institutional housing is the student residence.



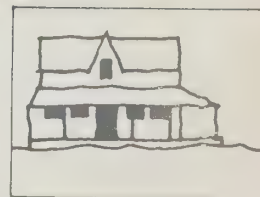
55



56

55. Cottage at West Point, Hallowell township, 1980.

56. Suburbia in the countryside on the Rideau River near Kemptville, 1980.





## CHURCHES AND CEMETERIES

Each religious denomination tended to adopt its own particular form of worshipping-places, although the Catholic and Anglican precedent of long rectangular halls with altar at eastern end tends to dominate church plans. The Anglican church also had a second focus, the preacher's pulpit. Larger congregations could be accommodated in the transepts of a cruciform plan. The gabled roof emphasized the long and narrow aspect of the plan, and the bell tower or steeple called attention to the building from a distance, signifying a place of worship. The much simpler meeting house was the common place of worship for various dissenting nonconformist Protestant sects, resembling nothing so much as an enlarged house in log or frame, but by the 1830's these groups were building churches quite similar in basic form to those of the Catholics and Anglicans.

Building materials for churches were as varied as for houses. Walls were built of log, stone, brick, or frame, generally reflecting the most advanced local technique. The structure of the ceiling was normally exposed, testing the ingenuity and skill of the builders in making it structurally durable as well as visually pleasing. The evolution of taste in church style paralleled that of houses, although certain styles, especially those with Gothic touches, were preferable to others. European models were emulated, but in more modest proportions and materials. While the earliest Georgian and Greek Revival styles echoed the Loyalist taste, by the 1830's the Gothic revival had begun to make its mark on Anglican, Catholic, and even Presbyterian churches. Some features of the Gothic style were more accurate renditions of the original forms than others, and by the later years of the nineteenth century the Gothic expression was more interpretation than reproduction. Most of the churches standing today in the waterway regions were built before 1900, so that few more modern places of worship exist than those of Romanesque influence built at that time.

Associated with most churches, especially those in rural areas and smaller towns, are burial grounds often predating the present church building. In some cases there is no church, the cemetery being a non-denominational project of the local community. Thus one finds cemeteries from place to place that are simply isolated in the fields alongside the highway. The earliest wooden grave markers have invariably disappeared and the soft stone of the last century is sometimes barely legible, but the burial ground is often the most direct way of "reading" the history of the local populace.



57. Christ Church, Burritts Rapids, 1980.







58. Country church and  
burying ground, Rawdon  
township, 1979.

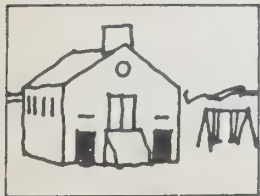


## SCHOOLS

59. A one-time one-roomed school near Kemptville, 1980.

In their genesis and social function, schools have embodied both the ambitions of their local communities of special interests as well as the policies of the agencies of colonial or provincial government

charged with overseeing the state's responsibilities for education. The very earliest schooling in southern Ontario was conducted in private homes. Where religious groups or local associations built specially for educational purposes, schoolhouses were simple and inexpensive constructions much like early





churches and meeting houses. Government provided neither financial aid nor guidance for school building until *The School Act* of 1846.

But by 1850, Egerton Ryerson, the Superintendent of Schools under the 1846 Act, began publishing guidelines for rural schoolhouses. In 1857 and 1876 comprehensive manuals on school design were published by George Hodgins. These were essentially pattern books for school building used throughout southern Ontario in the later nineteenth century. The general pattern specified a single large room, lit by large windows on either side; a formal main entrance for students; cloakrooms for the inevitable and bulky winter clothing; and a raised platform from which the teacher presided over the classroom. Church schools were similarly arranged. The most common building material was brick. Care was taken to site the school away from potential distractions, and to provide it with a comfortably large playground.

Private schools and academies provided more specialized education by separating age groups into grades and by emphasizing curriculum leading toward higher education. These varied considerably in form and material; some resembled the local house form on a much larger scale, with classrooms on two floors.

Urban public schools began as one- or two-room schoolhouses of similar form but as the educational system burgeoned, the many-roomed complex became the norm for both public and private education in larger towns. Many such schools were built between 1910 and 1930 in a simplified sort of Beaux Arts Academy style that was used to signify public works in general.

The one-room schoolhouse has been replaced by larger many-roomed rural schools in central locations served by school bus. These are single-storey,



60. Central Public School, Peterborough, 1979.

modernist buildings of brick, metal, and glass: the 1950's and 1960's versions of public works architecture. The tremendous expansion and transformation of the school system in the 1950's and 1960's has also resulted in a number of specialized structures. Diversification in the post-secondary system has led to the addition of new universities and community colleges in these regions, most notably Trent University. Where the functions of public primary and secondary schools are easily read from outside as a series of individual classrooms with additional offices and gymnasiums as required, the post-secondary institutions have much more varied and specialized requirements that in their turn may stimulate institutional architecture less recognizably educational in purpose.





## COMMUNITY ENTERPRISES

What we consider to be a community enterprise — a facility or feature created for the welfare of a social group or geographical community by a fraternal or religious organization, a private individual, or a local agency — does overlap certain other material classifications, especially with church, school, and public work. It comprises, in fact, a class of features that is not so distinctive as those specific categories in terms of architectural form, numbers, and history but is nevertheless important in collective terms. If the formal and functional attributes of these places are extremely variable, they still provide essential support for the life of their communities, connoting the level of collective enterprise, social responsibility, and community stability in each settlement. Thus we have divided the features for which municipal government has been historically responsible into those which are administrative and technical (public works), and those which are directed specifically to the welfare and cultural life of the townspeople (included as community enterprises).

Crucial to the support of the life of these communities were places for public health and welfare. Clinics and hospitals were built privately for the well-to-do and philanthropically for the poor (the government undertook only to provide asylums). In form they were like large houses or hotels. The almshouses and missions that were widespread in England were virtually non-existent in these regions. There were however a number of meeting houses of fraternal organizations (the Loyal Orange Lodge, the Freemasons, the Odd Fellows, the Foresters, and so on) that were the loci of local self-improvement, if not outright charity. Mechanics' Institutes appeared in major centres for the self-improvement of working men. Carnegie Libraries for similar purposes were also built in some towns; these were small buildings, but with characteristically monumental style. The



61



62

61. Only the more prosperous commercial towns could afford to actually build the parks shown on their early plans; Peterborough, 1852.

62. Community hall and commemorative plaque, Burritts Rapids, 1980.



increasing assumption of such originally philanthropic institutions as libraries by municipal authorities has permitted their expansion to serve all groups in the community.

Perhaps the earliest form of recognition that the municipality could and should act directly to support the public amenity of its territory was the public park. Where the earliest town squares were established for markets, or to set off the monumentality of public buildings, the pleasure ground of the Victorian era was intended as a place for polite social intercourse and recreation. In urban areas the streets and private yards remained the chief informal public spaces until the development of more prosperous conditions and some pressure from urban reformers near the close of the nineteenth century, whereupon the first few large public parks were developed. Far more common in these regions were public fairgrounds, replete with racing track and grandstand,



64

exhibition halls and yards, craft and produce sales, and carnival attractions.

64. YWCA and streetcorner park, Peterborough, 1979.



63

63. Odd Fellows Hall, Napanee, 1978.

The community arena as a municipal multi-purpose hall for sports, public gatherings, and special exhibitions has become a standard feature of most towns and townships in the waterway regions since the 1920's. In rare instances a town might have built or inherited a theatre, opera house, or other such hall for the enhancement of local cultural ambitions.





## PUBLIC WORKS

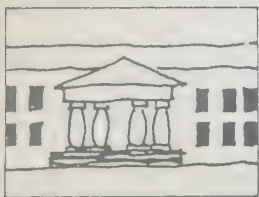
The works of government have served both to confirm the ambitions of those in power and to provide certain essential services to the public. Until 1867, the government was colonial, with the control of public building in the hands of imperial authorities and their local representatives. After Confederation, this control lay in the hands of both provincial and federal agencies.

The first type of public work was military. The only European settlement in the waterway regions preceding the British conquest of New France was the military installation protecting the French fur trade route at Fort Frontenac (Kingston). After the American Revolution, British fears of an American invasion of Upper Canada prompted the construction of a naval base at Kingston and small fortified outposts near main transport routes. Kingston

itself was protected by a wooden palisade and blockhouses, with major fortification on the site of Fort Henry. Between the War of 1812 and the final easing of tension with the United States in 1871 a number of military works were constructed, especially at Kingston (the stone fortification at Fort Henry, its barracks and bomb-proof storehouses, and the Martello towers), and along the Rideau waterway (blockhouses, and accelerated settlement of the land). Military building since Confederation has been directed to supply and service, since there has been no direct military threat in these regions in more than a century. Defence installations have been located to maximize strategic mobility, first by rail and now almost entirely by air, as at Trenton and Ottawa. Urban defence installations included a number of substantial armouries, built in decades past with crenellations and towers reminiscent of baronial Gothic castles found in Scotland.

Having attempted to ensure external security, the authorities devoted their concern to the construction of works for judicial administration, including courthouses and jails. Courthouses were quintessentially domestic in appearance, albeit enlarged and of more durable construction. Their features included the pediments, columns, pilasters, and stone facing of the stately Georgian and Greek Revival mansions of England. As new structures were built later in the nineteenth century, the accepted styles moved toward Italianate and Romanesque. The jails that often adjoined the county courthouses were also of severe stonework, solidly built to resist fire and disturbances. As the country grew and the judicial system became more complicated, large consolidated penitentiaries were constructed. There are several in these regions, notably in the Kingston vicinity (at Kingston, Joyceville, and Millhaven). Each reflects a different attitude to penal institutions: the particular attitude of their time. The appearance of the older jails and penitentiaries has become so much a

65. Kingston Penitentiary, early but undated photograph.



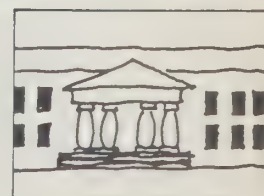


part of a collective notion of prison that their significance is at least as much symbolic as it is functional.

A number of buildings housing government services appear in towns throughout the waterway regions

just as chain stores do. County registry offices, small fireproof brick and iron buildings with a simple Classical gable front, were built to a more or less standard design prepared by the provincial government in the 1870's. In the larger towns, the federal post offices of the 1880's were built with a different

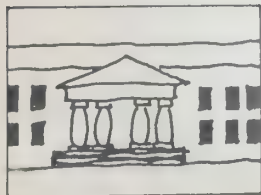
66. Napanee Town Hall,  
1978.



attitude to standardization - the high Victorian style was there in every case, but each building was highly individualized, providing space appropriate in scale to the size of the town served, and often employing locally produced stone and brick. Other government-designed structures of similar significance include customs houses and administrative offices.

The incorporation of municipal government during the colonial era and under provincial authority thereafter provided for a class of widely varied features constructed by locally elected councils and their officials. These features contrast both in terms of social function and architectural form with the highly standardized works of the larger governments. Municipal buildings and services have been especially indicative of local self-image and the prevailing economic realities of each community. Town halls were physically similar to courthouses, since municipal governments did perform certain judicial functions.

67. Westport and its water supply, 1978.



Again, these halls were often enlarged houses, in appropriate contemporary styles and durable brick or stone construction. In larger municipalities, the town hall might be found together with public marketplace, courthouse, and jail at a sort of institutional focus adjoining the commercial centre. This might in its turn draw other facilities such as the post office and the armoury into a small government centre.

As towns expanded in the nineteenth and twentieth centuries, the provision of such services as water supply, sewage disposal, and electricity took on increasingly sophisticated forms, in which large areas of population came to depend for essential services upon the work of small groups of specialized workers and on specialized buildings and engineering works. Perhaps the most ubiquitous symbol of municipal growth has become the water tower, a ready-made town advertisement. Not so visually distinct are sewage disposal works and waste disposal sites, increasingly essential as the urbanizing regions have expanded into the countryside.

Finally there are those buildings housing the functional agencies of local government. Fire halls became important with town growth in the late nineteenth century and the corresponding increase in wealth (and fire risk). Police stations have normally been associated with town halls. Modern features of public services in the countryside include township road maintenance garages, detachments of regional or provincial police, and the highway maintenance garages and salt storage domes of the provincial government.

## MANUFACTORIES

While “manufactory” is a seldom used word, it accurately defines the principal factor distinguishing this class of features especially from mills and mines: the central role of labour. Accordingly, this category includes the smallest workshop and smithy up to the largest factory producing specialized goods.

Almost every manufactured good had to be imported in the years of early settlement, and it quickly became apparent that in order for the colony to attain even a modest self-sufficiency there would have to be local production of basic items like furniture, clothing, glass, and ceramics. A great number of small dwelling-like structures appeared everywhere producing first domestic goods, then agricultural implements, tanned hides, shoes, barrels, and wagons. The buildings were comparatively primitive, serving as minimal shelters for a subsisting form of industry. Then came the railways, and industry was transformed.

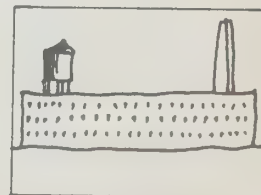
The food processing industry became significant, especially in Prince Edward County and on the plains near major towns. The new-found ease and speed of transport provided access to major markets for fruit and vegetable canning and large scale cheese making. The cheese factories were agricultural buildings to a large extent, much like frame barns - in some cases they *were* barns. They were usually clad in horizontal boards, with simple vernacular wood details, and ramps and loading doors for cheese and milk carts. They were located at roadside, selling cheese directly back to the local residents, but sending most of their production off to the nearest railway station. Canneries were seldom substantial stone or brick factories, since they were essentially seasonal operations and since the major investment was in canning equipment rather than shelter.



Most small workshops were consolidated over the years after the first railways under the pressure of a closely associated series of factors. Good transport accelerated expectations for goods and thus demand. More labour was needed for the production process, but without craft skills these workers had to rely on machines. The increased populations accelerated the demand for goods, and mercantile interests needed to expand the demand for the railways in order to recover their investments. The construction and operation of the railway was also a formidable industry in itself, demanding the production of rails, buildings, and rolling stock.

68. Lakefield Canoe Works, Lakefield, 1902.

The early large factories with their stone or brick exteriors and heavy timber framing were hardly distinguishable from the largest mills. As the new enterprises became successful, they generated their own capital resources, which when merged with certain mercantile capital interested in manufacturing





produced some more self-consciously stylish buildings. The compact multi-storey configuration of many factories was necessary for efficient transmission of motive power, economical movement of material, and adequate natural side-lighting. The structures were exceptionally heavy in order to support the machinery and provide resistance to the forces of pulleys, gears, and belts. Since the first priority was on efficient machinery, only established firms could afford to beautify their exteriors, embellishing structural necessities such as piers and pilasters with Georgian or Greek or Victorian details, and incorporating corbelled brick, elaborate window heads, ornamented belfries, and decorated chimneys (steam provided the primary motive power and heating supply until electrification).

These factories were in their turn consolidated — the combined advantages of specialization and assembly-line economics of scale could only be gained with increasing size and concentration. Many industries left the waterway regions for larger Ontario cities. Electrification has done the most to alter factory forms, freeing machinery location from the constraints of shafts and pulleys, providing efficient single-storey goods movement (conveyors and electric trucks), permitting a reliable form of lighting, and providing significantly improved ventilation. An additional factor affecting plant construction and operation has been increasing government and trade union investigation of working conditions and pressure for their improvement, especially in terms of safety. Factories have become sprawling, single-storey, suburban buildings which shelter production lines with relatively inexpensive and lightweight construction, recalling on a much larger scale the light frame construction of the earliest workshops and smithies.



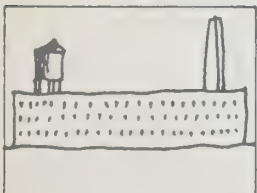
69



70

69. Woollen factory, Campbellford, 1979.

70. Cannery, Cherry Valley, 1980.



## PLACES OF BUSINESS

Just as the emergence, distribution, technology, and form of manufacturing are important factors in the historical transformation of town economies in southern Ontario, shops, markets, and banks in these regions have had great significance both as distinctive features on their own and for their effects on other forms of urbanization.

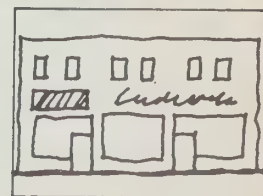
Mercantile establishments are essential parts of urban development in a capitalist economy. The market economy requires market places. These take two forms: public marketplaces for the selling and trading of agricultural goods and domestic crafts, and private shops for the merchandising of manufactured goods and other durables. The first marketplaces were simply bits of ground at the village crossroads where farmers or fisherman would come daily or weekly to sell produce to the local townspeople, and in return to buy processed goods and hardware from the town. Market halls were erected in more substantial settlements, especially when the railway provided the means for enlarging the rural area served by the market. Market halls and squares came to be directly associated with town halls in recognition of their local importance, as at Kingston.

But in the quest for mercantile sophistication and dominance, the more prosperous towns in the waterway regions provided main streets lined with permanent private shops of all description. The private store as one part of a main shopping strip had its genesis in the modest general stores and workshops of the smaller villages. General stores, with living quarters above or adjacent, came early to the waterway regions as virtual trading posts, taking in produce and grain for resale in exchange for hardware and domestic goods. They became village social centres, not the least because of their use for post offices and early telephone switchboards. They were located

according to travel times, so that no rural customer was more than a day's return journey away. They often affected boomtown fronts to distinguish themselves from surrounding dwellings. Constant changes in storefront design and their details reflected changes in the price of window glass and wood mouldings. The role of the general store as a village hub withered with the supplanting of post boxes by rural mail delivery, electrification (no need for constant purchases of lamp oil), and road improvements (increasing the accessibility of larger and more diversified town shops). Large scale industrialization virtually destroyed the small smithies and workshops in the villages by reducing the price of the goods they produced (like shoes, furniture, and agricultural implements) below the level that could support a local craftsman.

The development of the main shopping street in larger towns was assured by the generally rising living

71. Princess Street, Kingston, early 1860's.

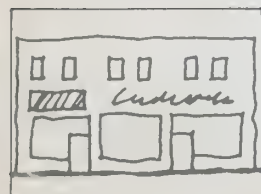




standards and expectations of the population (by the middle and late nineteenth century they no longer regarded themselves as pioneers). Main streets were lined with two-, three-, and four-storey commercial blocks with shops below and offices and dwellings above. These blocks were built primarily in brick

and stone — the continuous rows were vulnerable to catastrophic fires — with often ornate and impressive window and cornice treatment adapted from the stylistic fashions of the day. In the middle of the nineteenth century a great commercial innovation was the paving of sidewalks and the erection of con-

72. Napanee, 1978.





tinuous porch-like arcades to shelter pedestrians from traffic and elements. The introduction of cast iron columns and stamped tin cornices and window trim opened up the ground windows for browsing and permitted more ornate facades with little added expense, although the erection of complete cast iron facades was rare in Ontario.

Banks were certainly the most distinctively formal private establishments in towns, with expensive and finely crafted stone, brick, and iron detailing signifying their wealth. The prosperity of the commercial streets and thus of whole towns depended in large measure on the banks, for the financial establishments often controlled the railway and industrial connections vital to the towns' prosperity and growth. In this century, the standardization of branch bank design by each of the major chartered banks has brought about the demolition of many older branches, without replacing the visual amenity provided even the smallest settlement by the nineteenth century facades.

The ascendancy of the automobile as the primary force altering the historical patterns of land use and development has most drastically altered the habits of consumer shopping, especially since the 1950's. Larger and larger consolidated stores on the fringes of urban settlements have grown into extensive suburban strips which faintly echo at automobile speed and scale the traditional main street of pedestrian shoppers. These have been further transformed into self-contained, even climate-controlled malls surrounded by vast areas of parking. If the older main streets continue to survive as important shopping zones, it is most likely because they represent a considerable capital investment from the past in the form of buildings and municipal services.



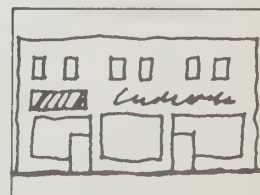
73



74

73. J. C. Sherin's store, Lakefield, before 1900.

74. The problem of vacant upper storeys on commercial streets, Peterborough, 1979.



## HOTELS AND ENTERTAINMENTS

Hotels, inns, taverns, and the like provide for a multitude of social needs on a transient basis, combining aspects of both dwelling and commerce with the addition of entertainment and socializing. The earliest inns were essential parts of both road and water travel; since the pace of both modes was slow, overnight stays on any long journey were essential. Each port had at least one near the crossroads. The inn grew from a typical house with one or two guest rooms into a more specialized building, with self-contained stables in a rear yard; kitchen, common room, and servants quarters on the ground floor; and bedrooms on upper floors. A very common feature was the enlarged version of the domestic porch on both ground and upper levels.

The tavern emerged as a new type of establishment in the last third of the nineteenth century in response to liquor licensing legislation that required overnight accommodation where alcohol was served. Some licensing laws provided for separate drinking and eating rooms, others for the refusal of female patrons. Town inns, which had earlier been of quite domestic appearance, enlarged and came to locate in commercial streets and to resemble commercial neighbours, either on the small scale of the tavern or the larger scale of the hotel.

The real emergence of the hotel as a feature distinguishing certain portions of the waterway regions came with the end of extensive lumbering in the 1870's and the development of the subsequent tourist industry. Areas like Lake Simcoe, the Kawarthas, Prince Edward County, and the Rideau Lakes were now easily accessible by rail and by steamer from the larger cities of Canada and the northeastern United States. The scenery of the waterway regions admirably suited the Victorian revival of the picturesque taste. The hotel became the summer resort of



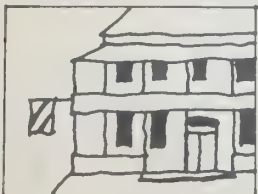
75



76

75. Loggers enroute to their shanties, Bobcaygeon, around 1875.

76. Bobcaygeon Inn, 1978.





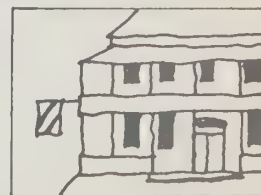
the well-to-do. Style became a functional concern: the rustic wooden vernacular was ideally suited to the picturesque resort image. The resort served as a useful centre for hunting and fishing in the remaining wild land. Perhaps nothing is more indicative of the rustic air as the common resort title of "lodge". A special case of the grand hotel of the railway age is the early twentieth-century Chateau Laurier at the northern entrance to the Rideau Canal.

The tavern did not fare so well; with constant assaults on the evils of alcohol by temperance factions, licensing in Ontario became more and more restrictive until complete prohibition was attempted in the 1910's and 1920's, and then rejected. By this time the tavern accommodation had become an unkempt accessory to the drinking room, so that pubs became shops or restaurants, or disappeared entirely. The more substantial hotels survived prohibition, although the Victorian drinking rooms had usually vanished. The revival of taverns has been purely for drinking and entertainment, with their original function as resting and watering places for the traveller made almost redundant by automobile travel. The quintessential modern accommodation, the motel, is another example of the suburbanizing effect of the automobile, with the emphasis being on driving-as-recreation rather than resting-as-recreation.

The rising affluence of these regions over the years has joined with general changes in public tastes to bring into being a number of constructions for public spectacles and entertainments. Opera houses and theatres became quite common for sizeable towns in the nineteenth century, accommodating recitals, dramatic and comic performances, public meetings, and occasionally opera itself. These halls subsequently became centres for touring vaudeville companies and eventually cinemas. Both the older halls and the newer cinemas often became the most grand and

conspicuous buildings on the main commercial streets of southern Ontario. Again, the automobile exercised a strong influence from the 1950's in creating the suburban drive-in, whose competition with traditional cinemas has brought about their considerable decline.

77. Barrie's version of the ubiquitous Roxy, 1980.





### Associating history with its traces on the ground

The generalized relation of each material type to a given historical sub-theme is shown in diagrammatic form on the right side of Table 1. By plotting each element associated with a particular sub-theme on a horizontal axis, we could visualize an aggregation of features to illustrate that sub-theme, that is, the features that would probably have been created or used in the economic or social activity described in the sub-theme. We could then have a general indication of the overall impact of that sub-theme on the features of the man-made environment of its day. This would in turn direct our search for present-day material traces of that sub-theme: individual buildings, views, street furniture, and so on. We would then have a set of visible resources and landmarks essential in presenting and explaining local and regional history to inhabitants and visitors.

By plotting each sub-theme associated with a particular material type on the table's vertical axis, we could outline for a given region a generalized explanation of the historical forces of culture, economy, and society determining or modifying the forms and functions of that type. We could then have an appropriate context in which to consider, for instance, the architectural style and constructional technique of a given building type, or the manner in which technical or entrepreneurial innovations might have taken place. Ideally, we would be able to see how a type or a specific example was historically significant — how it had both cultural meaning and importance.

The table shows four degrees of association. In certain cases the degree of association is fairly straightforward, as for instance in the case of a water-powered grist mill and the local staple milling sub-theme. But the associations of a house in a small town to any one of the several sub-themes affecting that

settlement as a whole will depend on the specific occupations and social standing of the dwelling's inhabitants over its lifetime: the associations are thus far more conjectural and require specific research for their clarification.

The largest circle on the table specifies a direct relation, where the activity described in the sub-theme simply could not have taken place without the material type in question. Mills are necessary for milling, farmsteads for agricultural production, cottages for automobile-oriented recreation, and so on.

The medium-sized circle denotes essential support, where a given material type is still necessary to the sub-theme, but where that relation is best seen as a support of the primary, directly related feature. For instance, the dwellings that house identifiable individuals whose labour supports an economic activity such as mining are often essential supports to the features directly related to that activity, the mines themselves. It should be reasonably possible to discover specific essential supports for a known building or feature directly related to a specific sub-theme.

The smallest circle denotes notable association, those features indirectly related to a sub-theme. Such features as community enterprises and mercantile establishments often perform general service functions for a variety of activities in a settlement, but cannot be tied to specific sub-themes without detailed local research and analysis.

Finally, where there is no symbol shown, it is still possible that an incidental association exists, but in this project such tenuous connections had to be overlooked. Still, these may well be of great importance in cases where the knowledge and opportunity exist to weave them into the distinctive character of particular locales.

The resulting table demonstrates in aggregate terms only a hint of the complex interrelationships among the trends of history and the buildings and landscapes of the past and present. It shows what we might expect to find in the landscape only if everything from the past had been conserved. But each successive historic activity changes the environment of its predecessors. Thus, this kind of tabulation serves primarily as a guide to what to look for in today's environment, and how to recognize the traces of specific historic episodes.

### The landscape context

Quite clearly, once the material expressions of past human activity are sorted, and their surviving traces in the present-day environment are identified, deliberate action must be taken to ensure their conservation, maintenance, and use. This requires at some point an evaluation of each building or feature on the basis of present condition, ownership, accessibility, and potential use as well as its architectural, scenic, and historical virtues. Methods for such evaluation are becoming more thorough and practical.<sup>4</sup> It is quite possible to consider the application of any of these contending approaches to specific properties and groupings within the regional framework. But in order to develop policies at a larger scale that would indicate the directions and priorities in the waterway regions as a whole, it is important to define certain landscape types as contexts within which the material traces of the past can be found, protected, and used in ways appropriate to their present surroundings.

The literature on landscape planning contains many schemes for classifying types of man-made landscapes, just as we have already classified discrete types of material elements populating those landscapes.<sup>5</sup> We can generally define four such types for the waterway regions, on the understanding that

physiographic factors may dramatically modify the actual appearance of any of the types from region to region. There may be some debate about the appropriate titles for these landscapes, but the brief definitions that follow should make clear what is meant by each. We must also make clear that the practical distinctions on the ground between one type of landscape and the next may not be especially definite, for reasons we will discuss subsequently.

The *urban* landscape is at once the least of these types in extent of area and the most densely populated with both people and buildings. Most, but not quite all, of what is shown as urban land use on land use maps for the waterway regions can be characterized as the urban landscape. This inexact correspondence exists because the visual perception of the landscape does not quite match its economic function. This is one of the caveats we shall discuss later. In any case, the urban landscape is distinguished from other settled landscapes by its *high density* of people and buildings, its spatial organization as a *network* of many routes, the *containment* of its views and vistas, the very close *proximity* of many different and not always compatible uses and features, and its tremendous *sensory variety*. For the purposes of heritage conservation, the chief interest of the urban landscape as an ensemble is the mix of many types and ages of building in close proximity, so that the various areas of town development can (potentially) be seen simultaneously.

Of course there is a great deal of differentiation within urban landscapes, and from one area to another, especially from the more dense central areas to the more diffuse suburban zones. This internal differentiation becomes more apparent with increasing size, and it takes on added significance where topography imposes additional conditions on the urban landscape. Nevertheless, for the purposes of this brief survey, the internal variation of urban landscapes is

more important for the way it distinguishes the urban from the non-urban.

Subject to many of the same social and economic influences as the established urban landscapes are a large number of what we shall call *urbanizing* landscapes. These are the areas that are least amenable to permanent designation as established uses, and they therefore create the most problems. Our inability to precisely define the extent of these areas is not just a filing problem: it indicates that these areas have special characteristics of continuing *change* that contrast with what we recognize as more stable urban or rural zones. It is in the urbanizing areas where the variance between the perceived environment and economic environment can be most dramatic. The most important formal characteristic of the urbanizing landscapes is their *linearity*. Urbanizing zones are invariably strips or margins, either along major roadways (in very rare cases along railways) or along the water's edge. While the water's edge does play a crucial part in all of the landscape types, in fact distinguishing the waterway regions from the rest of southern Ontario, it becomes the actual determinant of the form of those urbanizing landscapes that are not highway strips. Other characteristics include the *discontinuity* and *open-endedness* of these strips and margins, both in terms of their ability to physically and economically expand; their *intrusiveness* into pre-existing rural or wild landscapes (and in some cases even into a previously stable urban landscape); and their internal functional and formal *homogeneity* (which is to say that a cottage strip contains no uses but cottages, a highway strip no uses but automobile-related businesses, and so on).

On land use maps we can identify urbanizing landscapes as both the linear extensions of urban areas into the adjacent countryside and areas designated "rural non-farm and seasonal". Nevertheless, it is

difficult to pin down precisely the edges of these urbanizing zones. Where the urban and urbanizing landscapes meet, we might be tempted to see the highway strip as the straightforward extension of the traditional main street of town and be hard pressed to decide where one ends and the other begins. In fact, what we now regard as an urbanizing highway zone will become fundamentally urban once the lands behind become developed for urban industrial or residential use. That this would be an urban landscape quite different from the older towns should be quite apparent.

The third type is the most extensive in area in the vicinity of the Trent Waterway system, Lake Simcoe, the Bay of Quinté, and the northern part of the Rideau Waterway — in fact, all those areas outside the Laurentian Shield. The *rural* landscapes of the waterway regions are those in which even the most dramatic functional changes have taken decades to make themselves perceptible (we use rural in its specifically agricultural sense). The regional variation of physiographic characteristics is most apparent in the cultivated countryside where the soil is barely a skin over the bedrock, sediments, and till beneath. Rural landscapes, which coincide with agricultural land use, permit broad and distant views both of basic physiography and man-made developments. They are landscapes distinctive for their *low density*, their *extensiveness*, their *stability* relative to other landscape types, and in parallel their *tolerance* to individual changes because of their great extent and low density. While the individual buildings and other man-made features populating rural landscapes are indeed highly dispersed, the landscapes themselves are quite tightly integrated and consistent in contrast to the variety and differentiation of the closely packed urban areas.

Nevertheless, the tolerance of rural landscapes to change is not unlimited. They are increasingly vul-





78. Excerpt from CORTS  
land use mapping.

The land uses are:

1. urban
2. rural non-farm and  
seasonal
3. agricultural

4. unimproved

5. woodland

6. marsh, bog, swamp.

The landscapes would generally be:

- a. urban - part of 1
- b. urbanizing - strip areas

of 1 and 2

c. rural - 3

d. wild - 4, 5 and 6

nerable to disruption from the aggressively urbanizing strips and margins on one side and from the encroachment of wild lands on the other. This vulnerability is rooted in the economic difficulties to which agriculture is vulnerable, and it reveals itself most clearly in the form of derelict land. Dereliction is either a signifier of an interim state between active agriculture and the beginnings of an urbanizing landscape, or an indication of the inability of the farmer and the land to continue crop production or even pasturage. Thus rural landscapes are very slowly but inexorably decreasing in extent, with the exception of recently reclaimed marshland in the Holland River valley.

The fourth type is the *wild* landscape, which corresponds on land use maps with unimproved, wooded, and badly drained lands. This landscape type generally corresponds with our earlier descriptions of potentially productive woodlands and of certain undomesticated lands, excepting the wilderness category, which, as we have described, no longer exists. Indeed, the idealized broad landscape classification might have five categories, three of which (urban, rural, wilderness) are essentially stable and easily recognizable, and two of which (urbanizing, wild) lie with a great deal less stability in amongst the other three. Wild landscapes are dominant in those waterway regions which lie atop the Laurentian Shield. Their characteristics include *extensiveness* and *disorganization*. While they comprise considerable areas of *natural vegetation*, we must remind ourselves that all these have been worked over by man and that the nature we see today is in fact the work of man, albeit an inadvertent work for the most part. Wild lands may appear to be true wilderness in some places, but this is an illusion. Nevertheless, this illusion can and does generate popular pressure to protect wild areas from development.

Certain characteristics do, however, tend to complicate this simple classification. Foremost is the character of the water's edge itself. In detail, the character of this edge can change from wild or urban, to urbanizing, and then to rural in the space of a few hundred yards, and in the interval of a few years. But, to clarify, these are broad classifications; the water's edge is considered here in its more general aspect. In fact, rural landscape can contain pockets of wild land, or a crossroads hamlet, as isolated aggregations that are readily perceived as being surrounded by the agricultural uses of the rural landscape as we have described it. The human use and significance of a feature will be different in different contexts. A small tract of wild land may lie within an urban landscape and serve as a park; another such tract may be a maple sugar bush in a rural landscape; yet another wild tract may be a derelict, overgrown lot awaiting development within an urbanizing zone. We find urbanity in the rural village, and wild landscapes in the town. A further complication is the physiography, which separates the waterway shores into a number of visually and economically distinctive regions. In a productive agricultural landscape, the coming of seedlings and brush into a field may signal its dereliction and its beginning "wilderness". But in marginal lands on the Shield, productive pasture may have a similar appearance. We can see examples of these local variations of the prototypical landscape types in some of the photographs illustrating this essay.

The conservation of buildings and areas with architectural, scenic, or historical value is most difficult to accomplish in the rapidly urbanizing zones. Here we are faced with deeply-rooted and ongoing historical trends with great and often irreversible impact on the land: road construction, private recreation, building material extraction, industrial development, and so on. The particular pressures signified by and in urbanizing landscapes threaten the stability of

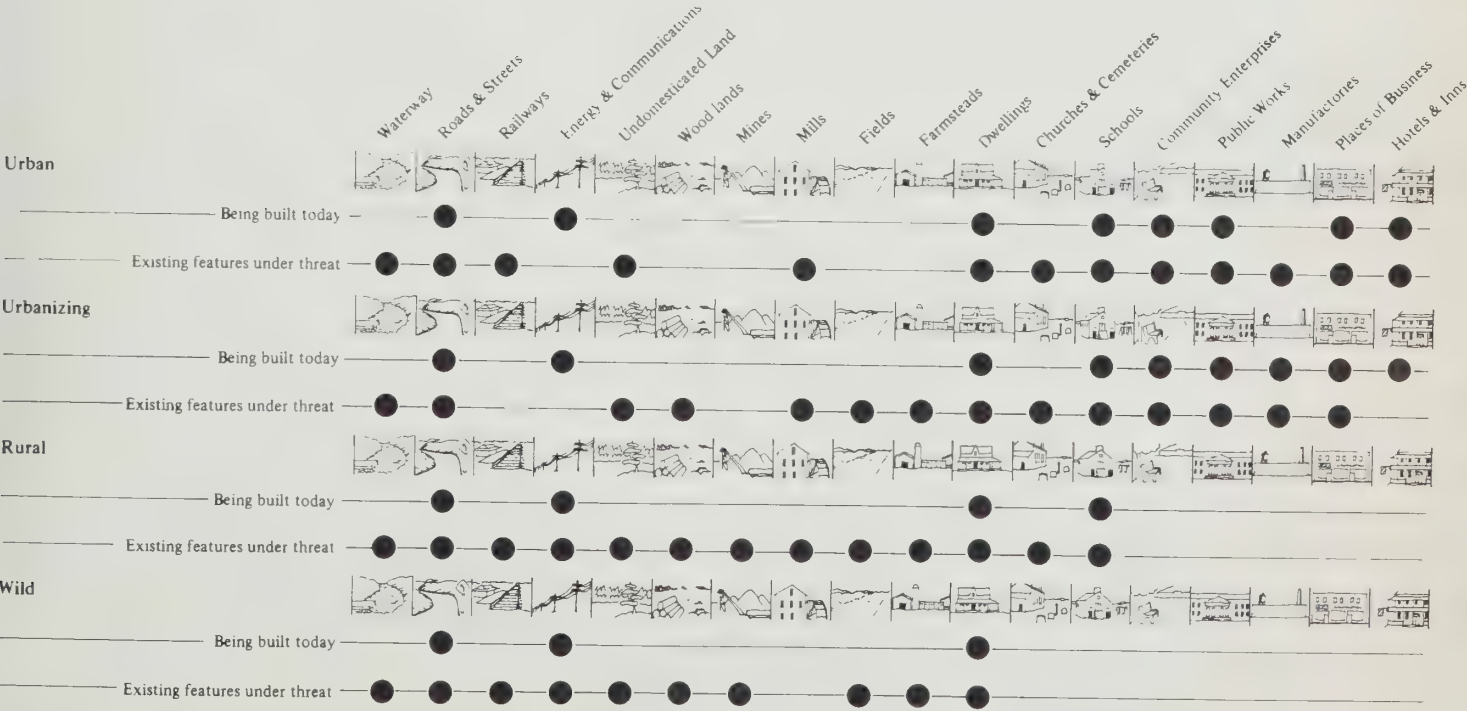


other landscape types, and thereby spell danger for the continuing maintenance of the inherited building stock and visual environment. It is not that rapid urbanization is necessarily bad in terms of environmental quality. But recent experience in these regions has shown that urbanizing landscapes can create problems with their rapidity of change and expansion; their thus far demonstrated indifference to established man-made and physiographic patterns; their general disregard for human perceptual comfort, either by aggressively overwhelming that comfort or by ignoring it altogether; and their overall appearance of impermanence and transition, which is unsettling in all the senses of the word. In order to conserve the important man-made heritage of these zones, we must adopt strategies sufficiently aggressive and imaginative to deal with the momentum and dynamism of this rapid development.

### The planning context

Stable urban and rural landscapes and dynamic urbanizing and wild landscapes have all existed, albeit in different proportions, in these regions since their colonization began almost two centuries ago. Until the very rapid and accelerated development of this century, there was a generally appropriate fit between the use and appearance of buildings and their landscape contexts. But today we find many awkward situations (and not only in urbanizing zones) where the needs of newer economic activities threaten the remains of the older order. We can see in barest outline in Table 2 a wide range and pattern of existing features in each type of landscape that may be threatened with destruction by new development. Yet at the same time, new developments must rely on the support of the very pattern of building and land use that they may threaten.

TABLE 2







79. Blacksmith's forge and residence dating from 1832, Burritts Rapids, 1925.

While the maintenance and enhancement of a region's livelihood does require the production of new space to house new activities, that livelihood also requires a network of supporting facilities far too expensive and wasteful to produce anew each time there is economic change. Accordingly, we have a changing pattern of economic and social activities — and the pace of this change varies throughout the waterway regions — which must be housed for the most part in buildings and on land whose forms derive from earlier activities. Where this adaptation causes little strain on either the new requirements or the old forms, then the man-made heritage of a place can be conserved easily and as a matter of course. Where older buildings and districts cannot be preserved in their original uses, because those uses, rather than the physical fabric, have become obsolete, then recycling or adaptive re-use provides important opportunities to conserve architecture, landscape, finances, and energy. In more difficult circumstances, where the physical structure and services do require considerable upgrading, all these economies of conservation must be brought to bear in demonstrating the overall benefit of retention and upgrading in lieu of new construction. And when new construction is required, it ought to be undertaken only when the other options have been fully explored, and in a manner that suits its physical context as well as it suits its functional requirements.

In other cases, certain tactical efforts to upgrade and maintain districts, especially residential and older commercial areas, might in fact transform the historic trend so as to obviate the need to recycle buildings to new uses. Economic rehabilitation, through direct financial aid or through changes in taxation, may have the effect of transforming, in a given locale, a historic trend of decline to one of stability. This of course would have tremendous impact on the conservation of buildings and their settings, even though heritage conservation *per se* is not considered explic-

itly. An understanding of history and its material expression is not only a necessity for museums, restoration projects, historical parks, and the like. Such an understanding is also crucial as the foundation for planning strategies to channel or diffuse the directions and pace of development so as to conserve not only the expressions of human heritage in buildings and landscapes but the social and economic livelihood of their inhabitants as well.

These planning decisions about whether and how to recycle buildings and landscapes, or whether and how to support the maintenance of their existing uses and users, have a detailed architectural corollary. What sort of architectural treatment is most appropriate to the recycling of a building? Traditionally, historic restoration often insists on returning the building's character to a remote and sometimes romanticized reflection of its earliest days or to the era of its greatest importance. But each building owes the development of its special character over time to the actions and imprints of many people and to several historic episodes, most of which will likely have some material expression unless purposely effaced. The economies of not undertaking intensive restorations should be obvious, but if revitalization of an old building or district takes care to retain the traces of the passage of time and events, the result may be a far more valuable revelation of the intimate relations between human life and the places that shelter it.

Thus the goal to which this experience seems to point is the rejection of not only newness for its own sake, but also oldness for its own sake. It is no less important to ensure the retention of the strands of history *throughout* our environment in these regions as it is to take action to protect special places. It is no less important to ensure the good fit of new development into ordinary landscapes as it is to control development in the environs of notable landmarks.



80. Former blacksmith's forge and residence dating from 1832, Burritts Rapids, 1980.



81



82



83



84

Fenelon Falls in about 1880 (81), about 1903 (82, 83), and 1978 (84).

The purpose of heritage conservation in the waterway regions, and no less throughout the province, ought to be making explicit in a practical way the historical evolution of the human environment, the continuity of its ongoing change, and even the appropriate patterns for its future evolution. Understanding the general historical development of these regions and its specific trends and expressions on the shores of the waterways is no less essential to the long-term success of any development strategies than the balance sheet.

## Notes

1. Much of the research done by the staff of the Historical Planning and Research Branch has been published as a collection of technical papers, *Heritage Studies on the Rideau - Quinté - Trent - Severn Waterway*, Toronto: Historical Planning and Research Branch, Ministry of Culture and Recreation, 1980. This essay is taken from Chapter V, "Material History". The information on historic themes is abstracted from Chapter IV, "History of the Waterway".



2. A full description of the historical themes and subthemes may be found in "History of the Waterway", *ibid.*
3. Little research has yet been focussed on the evolution of most of the types of buildings and landscapes in Ontario discussed here. The bulk of existing sources is devoted to "antiques", including furniture, pottery, and other domestic goods, and the dwellings of the wealthier classes. The outline histories of each type in this essay are accordingly based on fragments from numerous sources, many of which also informed the preparation of the historical themes, and from which detailed citation would be unnecessarily complicated. The sources of most usefulness are listed in the bibliography in "Material History", *ibid.*
4. See: H. Kalman, *The evaluation of historic buildings*, Ottawa: Parks Canada, 1979; E. Parker, *A guide to heritage structure investigations*, Toronto: Ministry of Culture and Recreation, 1979; M. Corbett, *Splendid survivors*, San Francisco: California Living Books, 1979; M. Fram, *Ontario Hydro, Ontario Heritage*, Toronto: Historical Planning and Research Branch, Ministry of Culture and Recreation, 1980. Bibliographies in Kalman and Fram provide additional sources.
5. see: A. Coleman, *The Planning Challenge of the Ottawa Area*, Ottawa: Queen's Printer, 1969 (Geographical Paper 42); N. Fairbrother, *New Lives, New Landscapes*, New York: Alfred A. Knopf, 1970; K. Lynch, *Managing the Sense of a Region*, Cambridge, Mass.: MIT Press, 1976; and their respective bibliographies.



85. Rehabilitation in Perth, 1980.





# The Valley Town

Surveying the urban heritage in Dundas

Marilyn Miller and Joe Bucovetsky





2. View from Cotton Mill Hill.

## Introduction

This study of Dundas was undertaken in 1977 as part of a broader project to develop survey and recording methods for heritage places and buildings found within a variety of different environmental contexts throughout the province. The town of Dundas was chosen as the place to develop these methods in an urban setting. In part, this choice was made because Dundas and its environs could be affected by *The Proposed Plan for the Niagara Escarpment* prepared by the Niagara Escarpment Commission under *The Niagara Escarpment Planning and Development Act, 1973*. Since 1975, the Historical Planning and Research Branch of The Ministry of Culture and Recreation has provided information and advice to the Niagara Escarpment Commission on the conservation of the Escarpment's archaeological and historical resources. More importantly, however, Dundas was selected for the urban heritage survey case-study because of its geography and history. The town is ideally located in the valley that provides the main transportation route from Lake Ontario to the western interior of the province. This location was a factor in Dundas's early development as the most important commercial and manufacturing centre west of Toronto in the 1830's and '40's. The urban morphology, streetscapes, and structures of the town today still reflect Dundas's early history and development in their form and function.

The survey method described here is a systematic approach to discrete area analysis that can easily be taken one step further to develop conservation strategies within the overall context of municipal or regional plans or such studies as transportation or site development plans. It can serve as a guide for similar surveys in other towns. For example, the survey method may be of use to municipalities undertaking

Downtown Revitalization Studies or Heritage District Studies. The method could also be employed by teachers and students of geography and history who are interested in studying the historic functions and patterns of their towns. Results of surveys can be used in many ways, including:

Planning for the preservation and enhancement of the historic character of a town;

Publication of local histories;

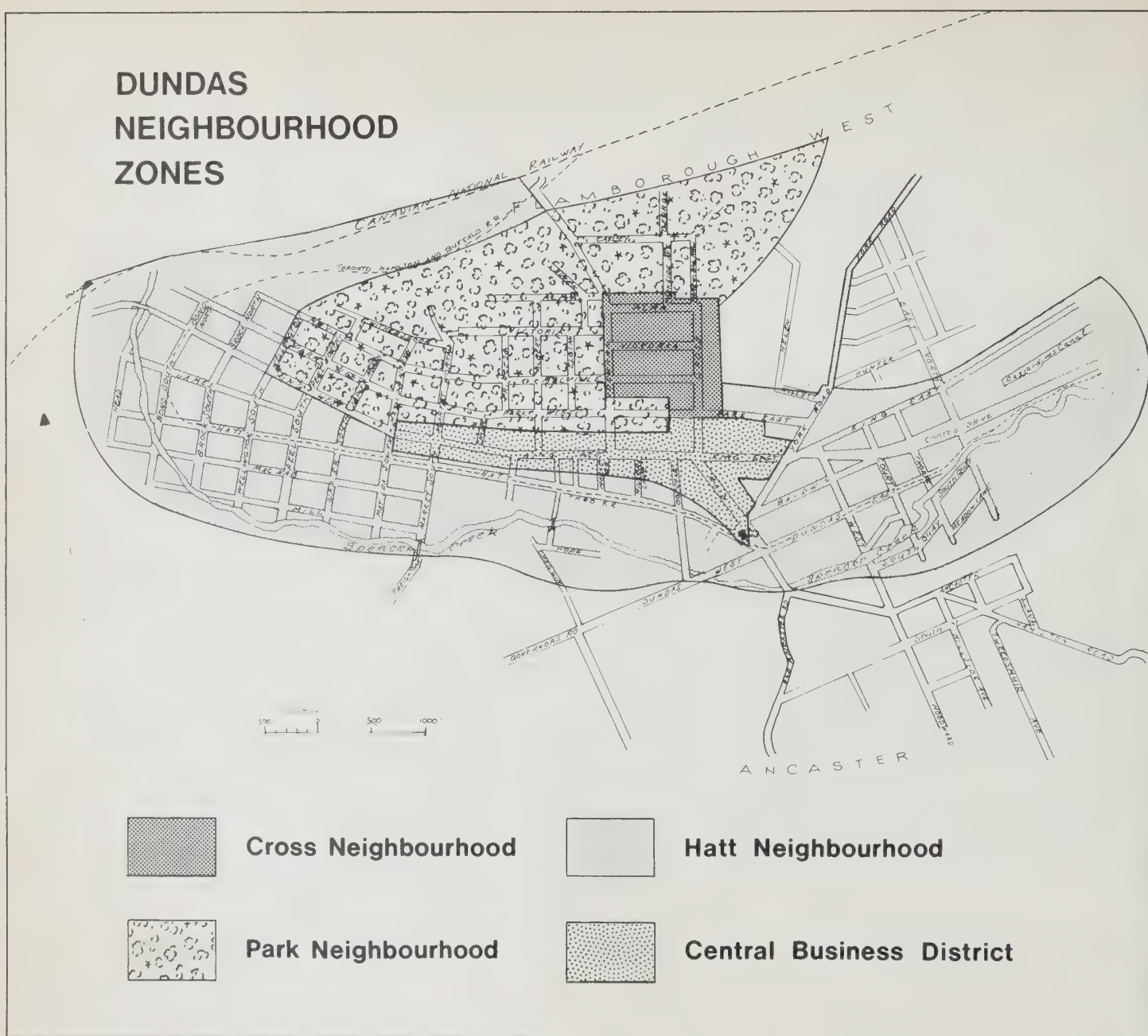
Development of heritage walking tours; and

Use by researchers in high schools, universities, and community colleges.

The method for surveying Dundas was based on an approach to the town not as a collection of individual buildings but as a unit comprised of several discrete areas of neighbourhoods that interact to make up the whole. The task was to identify these areas and analyse their development, their history, and their built form. A thematic approach to the history was combined with the development of a typology for structures in order to facilitate the analysis. This technique may be adapted for any similar study of heritage resources in towns throughout the province.

The Dundas case-study was undertaken by two full-time staff members: an historian and architect, assisted by a student in historical geography working under the Ontario government's youth employment programme. This multi-disciplinary approach has proved extremely useful to the Historical Planning and Research Branch in carrying-out documentary and fieldwork studies on a variety of heritage conservation issues.

# DUNDAS NEIGHBOURHOOD ZONES



3. Dundas Neighbourhood  
Zones.



## INTRODUCTION TO SURVEY METHOD

The Dundas survey identifies and evaluates heritage resources in a typical small Ontario town, and relates these resources to the town's hinterland. Heritage resources were defined as the aggregate of old buildings and structures, street furniture, landscaping, planting, and transportation and communication routes. These resources were viewed within the context of the total cultural landscape where old and new features exist together. The form and pattern of the landscape was defined by studying the interplay of historical activity within the physical environment.

The purpose of the Dundas survey was fourfold:

- (1) to collect historical, architectural, and land-use data on buildings, streetscapes, and neighbourhoods;
- (2) to describe the character of a small town by explaining what is there now, and how it came to be there;
- (3) to identify important features, locations, and circulation routes that graphically convey a sense of the past and that merit conservation; and
- (4) to suggest ways in which the present study could be continued toward the development and use of guidelines for conserving those elements that typify Dundas's historic character and functions, and perhaps point the way to similar studies of other Ontario small towns.

### Survey method: work phases

1. **Background Research** - The first step in commencing this survey was to collect information on the natural history of the region. Natural features include topography, drainage, geology, climate, and soil. Research of this kind permitted an understanding of the physical setting and how it affected the development of Dundas: for example, the shape of the town conforms to the shape of the Dundas Valley.

Research on the cultural history of the region was concerned with the themes of economic, social, and political activity associated with the development of Dundas. These activities include early settlement, and developments in agriculture, transportation networks, commerce, manufacturing, and mining.

A thematic history provides a good description of the more important historical activities affecting the town's growth and also provides one criteria for choosing significant heritage resources. Those features associated with a significant historical theme, for example, the construction and use of the Desjardin's Canal in Dundas, may be considered as important candidates for preservation.

2. **Data Collection** - Once the physical and historical setting was known, it was then time to begin the work of collecting information on heritage resources in the field. The characteristics and features of the town were recorded street by street. This involved writing descriptions and taking photographs of features, noting land-use, and paying particular attention to older structures, their mass, height, set-back, and siting; to harmonious groups of buildings; and to street form.

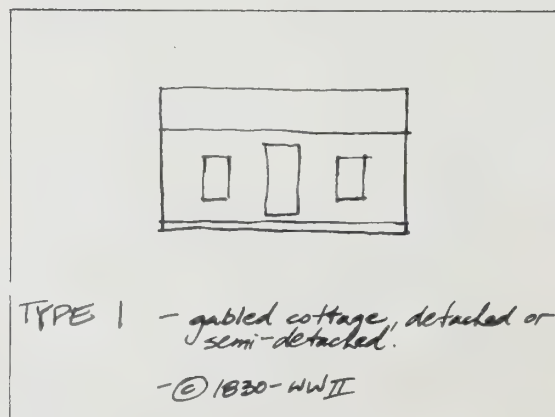
For the purposes of the survey the urban area was approached on a neighbourhood basis by dividing the town into clearly identifiable and distinct zones. A "neighbourhood" was defined as a discrete area exhibiting similar characteristics. Neighbourhoods in Dundas were delineated on the basis of:

- (1) predominant land use (eg. commercial, residential, industrial);

- (2) transportation routes and circulation patterns - neighbourhoods can be bounded or connected by railways or highways;
- (3) physical features - topography, drainage, and soil can affect land-use and the development of built form;
- (4) predominant age of buildings and the date of land annexation; and
- (5) socio-economic character (e.g. expensive residential housing would usually be found in a separate neighbourhood from moderate- to low-income housing).

A sense of neighbourhood was developed fairly early in the survey-work thus enabling the organization of field-work into manageable units. The final boundaries of neighbourhoods were not established until the field-work was completed.

When describing individual buildings, survey-work was facilitated by the development of a



housing typology. The housing typology defined the general form and function of identifiable classes of housing in Dundas and enabled the extensive recording and describing of individual structures to be undertaken much more quickly. Rather than recording similar structures in repetitious detail, one noted, for example, a "Type One" dated 1850.

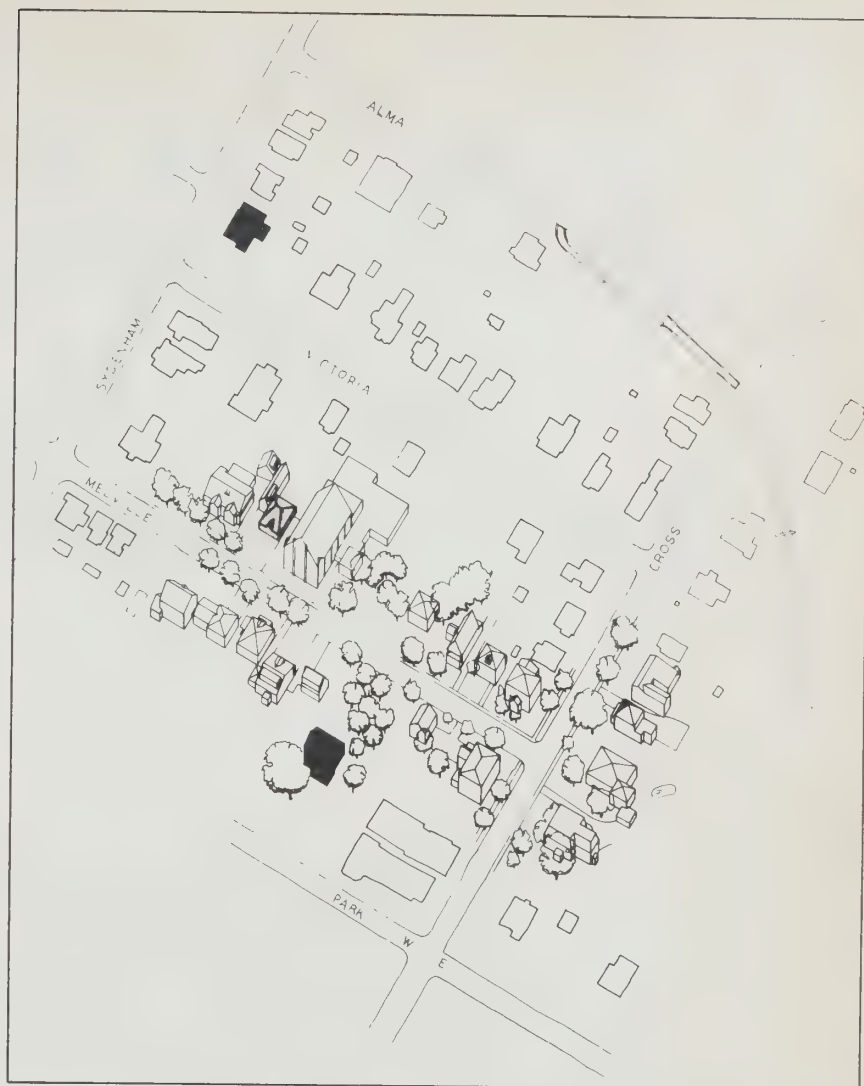
Each type of structure described included information on function, plan, size, style, and materials of construction. Housing types can often be related to certain historical periods, e.g. a style popular in the 1880's may relate to a period of prosperity.

### 3. Survey Report - The survey report has five sections:

- (1) A landscape-history describing the interrelation of natural features, historical activities, and the development of town form;
- (2) The housing typology developed for survey field-work described in full with sketch drawings of each type; and
- (3) A description of each neighbourhood in terms of its history of development, streets and roads, lots and land-use, lots and structures, and surviving heritage features. The important heritage features in each neighbourhood are listed. The criteria for choosing these features are: (i) historical interest - is the feature associated with significant historical activity?; (ii) architectural interest - is the feature prototypical or exceptional?; and (iii) endangerment - is the feature likely to be destroyed or altered in the near future?

This list of features and accompanying map is useful for indicating an area's potential for heritage conservation. Common building types associated with each neighbourhood are noted. Each neighbourhood description is accompanied by an axonometric drawing of a typical block or street corner (except for the Central Business District that is accompanied by a photo montage of the streetscape). This drawing illustrates the characteristic features of each neighbourhood that distinguish it from the others. The axonometric, a scaled drawing showing a building in three dimensions, illustrates the size, type, and plan of buildings; the association of structures to each other and to the street; the siting of structures; etc. Each neighbourhood is mapped to show the location of all buildings with both the salient features such as lot divisions or street pattern and important surviving heritage features noted.

- (4) Guidelines - The study ends with suggestions on ways to renovate and rehabilitate existing properties and incorporate new development into the historical fabric of the town without destroying its character. Guidelines direct such things as land-use, in-filling, building height, lot density, setbacks, traffic circulation patterns, parking spaces, etc., and can be designed to allow for new development while still conserving typical structures, groupings, and streetscapes.
- (5) Data Bank - In an appendix, the town's character and resources are recorded on inventory forms with one form for the town, one for each neighbourhood, and one for each feature or collection of features.



5. Axonometric drawing of a typical block in the Cross neighbourhood.



## DUNDAS: THE PHYSICAL SETTING

### The Niagara Escarpment

The Niagara Escarpment is a unique physiographic feature in Ontario, a continuous ridge of dolomite, often exposed as cliffs, that runs from the Niagara River to the Bruce Peninsula. The town of Dundas is located in a large valley that breaches the escarpment wall.

The Niagara Escarpment has had a tremendous impact on settlement, land-use, and development of the areas surrounding it. The scarp presented an imposing barrier to transportation and settlement, and consequently the land below the escarpment was settled much sooner than the land above. There are several notable breaks in the escarpment created by river valleys where transportation routes could bridge the barrier and where villages were often located to take advantage of the superior connections. The rivers also attracted settlement at the point where they flowed over the escarpment because of the excellent potential for harnessing water power.

The steep slopes and shallow rocky soils in the immediate scarp area inhibited agricultural use. The escarpment forms a protective climatic barrier to the land below it enabling a longer growing season; this, plus superior soil and drainage, made the land below much better for agriculture.

The Niagara Escarpment has long been an important source of building materials including cut stone, lime, shale, and crushed limestone. Quarries in the Dundas and Burlington area produced crushed limestone as a raw material to be used as a flux in the steel making process at the Hamilton Steel Works.

### The Dundas region

The Dundas Valley is a notch in the Niagara Escarpment where that feature makes a major realignment from an east-west to a north-south direction. The Dundas Valley offered easy access into the western interior of the province above the Escarpment; long before the white man's arrival, it was a focal point for transportation routes.

The town of Dundas rose to early prominence because of its superb location in the Dundas Valley at the head of Lake Ontario. The road from Niagara to York along the lakeshore passed the head of the lake and crossed the Dundas Valley. Roads to the west were channelled through the breach in the escarpment wall at the western end of the valley. The marsh at the mouth of the valley was the head of navigation for shipping on Lake Ontario. The excellent location and favourable topography, drainage, climate, and soil were factors contributing to the valley town's rapid development as a milling, trading, and manufacturing centre.

Pre-glacial erosion determined the original shape of the valley but glacial deposits greatly modified its original form. Present-day Dundas is situated on



6. The Dundas Valley,  
1897.



level terraces between the more rolling western moraines and the Dundas Marsh. The kame moraines at the western end of the valley obscure the south wall of the escarpment and provide an easily negotiated pathway into western Ontario.

The climate of the Dundas Valley is mild and favourable to agriculture. Below the escarpment, Lake Ontario exerts a moderating influence and the area has a longer growing season and higher temperatures than land above the barrier.

7. This 1828 Canada Company map illustrates Dundas as a focus for early roads.

The valley possesses fertile clay-loam soils that are well drained by layers of sand and gravel. Topography is the only hindrance to agriculture and poses a problem at the western end of the valley where steeper slopes are subject to erosion.

The valley is drained by three streams: Sulphur Creek follows the main valley floor, Spencer Creek enters the valley at a waterfall northwest of Dundas, and Ancaster Creek flows over the south wall of the valley below the village of Ancaster. These streams provided a constant source of power for milling establishments at Crooks Hollow, Ancaster, and Dundas during the first half of the nineteenth century, and have been used for power until recent years.

Ancaster village to the south, Waterdown to the north, and Crooks Hollow to the west were all established at about the same time as Dundas. The valley-town quickly overtook these other milling centres because of its superior location and better water power.

## HISTORY AND DEVELOPMENT OF DUNDAS

### Indian occupation

Before the arrival of Europeans, there was a long period of native settlement in the Dundas region.

Archaeological evidence from the eastern end of Lake Ontario suggests that native peoples might have occupied the Dundas area as early as around 9,000 B.C. By about A.D. 500 native peoples were in small campsites on the points and islands of Cootes Paradise, experimenting with corn horticulture.

By the sixteenth century A.D., Iroquoian-speaking native peoples were clustered in villages around

Hamilton Bay. These "Neutral" Indians were contacted by Jesuits and French explorers in the seventeenth century. The Neutrals were dispersed by the New York Iroquois (Five Nations) in 1650. Little is known about native occupation in the Dundas area between that time and the influx of European settlers in the late 1700's.

### British control

The Dundas region came under British control in 1759 after the fall of Quebec, when British influence was extended as far as the Mississippi Watershed.

After the American Revolutionary War, the influx of large numbers of Loyalists and their native allies prompted the British to purchase land from the Mississaugas for settlement. In 1783, the British purchased an area from Cataraqui to the Trent River, and in 1784 they acquired the land west of Niagara and the head of Lake Ontario.

Land boards were set up in the 1780's to receive applications from settlers. These boards continued the practice of the British Commanding Officers who had encouraged settlers to take up unsurveyed lands on the understanding that they would receive their grants when the surveys were completed. Soon "authorized squatters" followed the shore and inlets of Lake Ontario and moved into the Dundas Valley. The first settler in the area was the Widow Morden who began a homestead on the north shore of a creek leading into Lake Ontario. This site (Lot 17, Cons. 1, Flamborough West) later became Cootes Paradise.

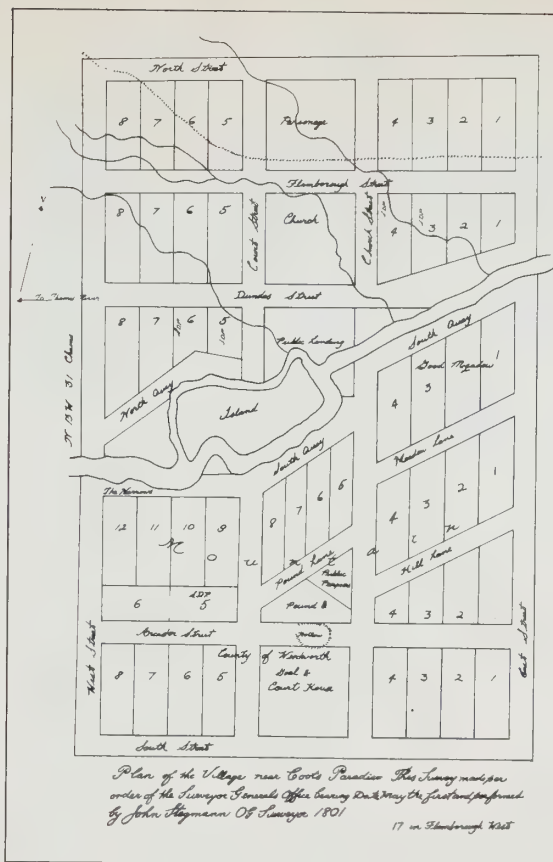
Lieutenant-Governor Simcoe arrived in Upper Canada in 1792 and reorganized the administrative districts, putting the Dundas Valley in the Home District. Simcoe had an ambitious plan for the new province involving the establishment of a strong



Simcoe visited Cootes Paradise in 1793. The area received its name from a British army officer, Major Coote, who enjoyed hunting in the Dundas Marsh. The Lieutenant-Governor saw the potential of the Indian portage route from Lake Ontario to the Grand River via the Dundas Valley as a military road to London, Simcoe's proposed capital on the Thames River in Southwestern Ontario. The valley route provided access to the west of Upper Canada and the upper lakes by way of portages to the Grand, Thames, and Ausable Rivers. On his return to York, Simcoe ordered surveyor Augustus Jones,

This survey line became present-day Dundas Street, known locally as the “Governor’s Road”.

Jones travelled up Spencer Creek (as it was later called) and at the Widow Morden's homestead he noted that on the north shore the ground rose a little, making "an eligible place for landing public goods.<sup>2</sup>

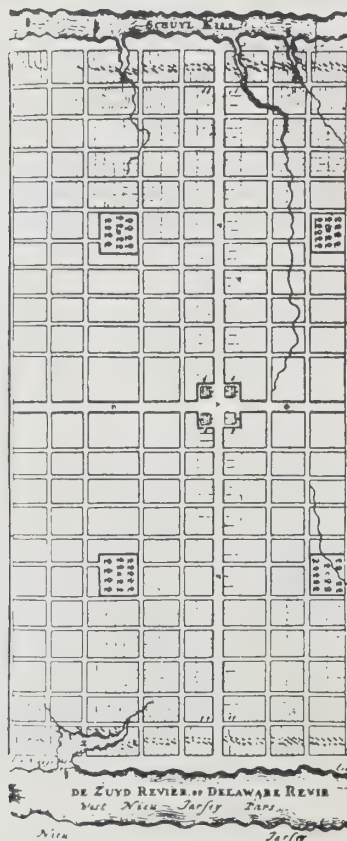
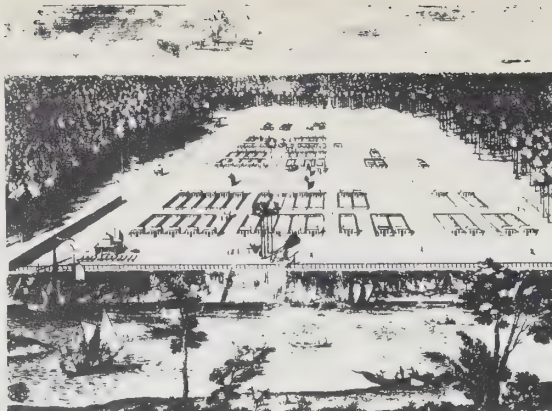


8. Simcoe's plan for Cootes Paradise, 1793-1803.

On the south bank Jones saw low, flat ground overlooked by a pine-covered ridge, "an eligible place for erecting mills".<sup>3</sup> This spot was to become the centre of a sixty-acre parcel of land set aside as a reserve for the town of Cootes Paradise. Unfortunately, Jones could not see the townsite for the trees; the area, with its swampy banks and steep hill to the south, was unsuitable for building.

The survey of Dundas Street, completed in 1793, was the first step toward ordered settlement of the region. The British colonial government began a series of land surveys dividing the province into a

Antecedents for the Cootes Paradise plan: Savannah, 1734 (9) and Philadelphia, 1682 (10).



grid network in order to promote and control settlement through the granting of lots and the maintenance of Crown and Clergy reserves. The rectilinear survey lines, ignoring natural features such as mountains and watercourses, represent a rigidly ordered intellectual construct imposed on disordered nature. The survey system controlled the shape of the land through the development of roads, clearings, tree lines, etc., and remains as an integral part of the landscape today.

The town reserve of Cootes Paradise, surveyed in 1803, illustrates Simcoe's desire for an ordered and orderly society based on strong religious and state controls. The survey took in both sides of Spencer Creek, with Dundas Street beginning at the public landing in the centre of town. Blocks of land were reserved in the centre of the survey for the State: courthouse, gaol, and pound on the south, and for the Anglican church and parsonage on the north. A small corner of the pound area was set aside for public purposes - presumably a market place.

Cootes Paradise, the planned town, did not develop as Simcoe had expected. Rather, undifferentiated settlement took place to the west at a more favourable location with a good mill site and flatter topography. However, Simcoe's intended linkage of water and land transportation routes did occur and led to the early development of Dundas as a milling and shipping centre. The old Cootes Paradise plan still exists in an attenuated form in the eastern section of Dundas.

### Early settlement, 1787-1812

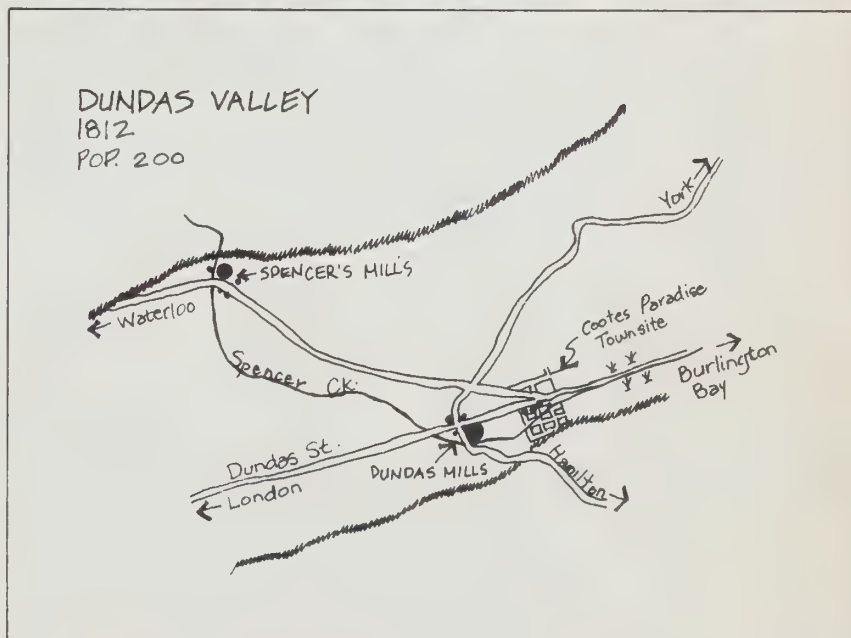
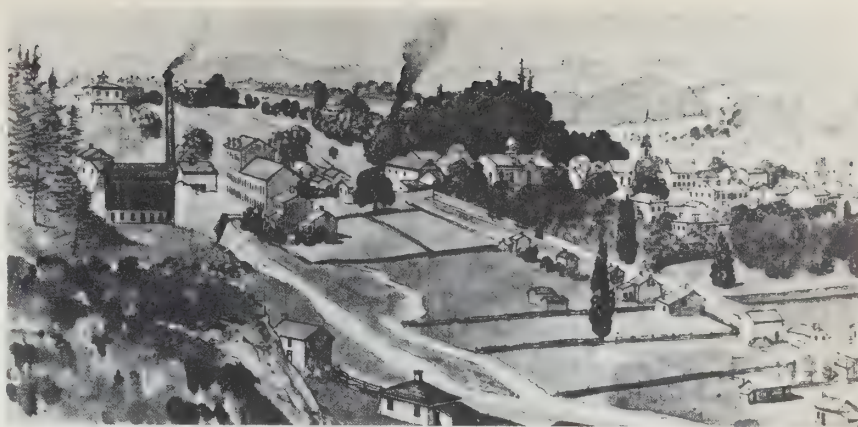
Three factors contributed to the early settlement and development of the Dundas Valley: location, water power, and soil. Settlers were attracted to the Dundas Valley because of the availability of good water power from Spencer Creek in conjunction

with good access routes to the valley. Two roads leading from Niagara to York crossed Spencer Creek at Dundas and connected the village to Ancaster and Burlington Bay. The old "Detroit Path", a native trail, led from the valley through Ancaster to Brantford on the Grand River. Governor's Road, opened in 1793, also led to the Grand. Another native trail through the valley and Beverly Township was made into a settlement road to Waterloo by 1800. In 1805, a cart track later called the Brock Road was opened from Dundas to Guelph.<sup>4</sup> These same roads still connect Dundas to the regions north, south, and west of the town.

Settlers pushed up the Dundas Valley during the period prior to 1812 and the area was settled much earlier than land above the Escarpment. There were many applications for land in the area and by 1799 it must have been nearly impossible to find a grantable lot.<sup>5</sup>

A grist and saw mill was erected on Spencer Creek west of the Cootes Paradise town plot by James Morden in 1799 (on Lot 14, Concession 1, Flamborough West). This mill became the focus of the future town of Dundas. Richard Hatt bought the mill from Morden around 1800 and called it the "Dundas Mill" after the street running through the valley. Hatt originally owned a mill near Ancaster, a thriving village close to Dundas; however, he moved his operation to Spencer Creek, recognizing this as the superior location. Despite Ancaster's early predominance as a milling centre, it had an awkward location perched atop the Escarpment with a precipitous road connecting it to the Dundas Valley. With the broad flat terraces and good road connections, the Dundas site beside Spencer Creek was much better by comparison.

The region surrounding Dundas Mills in Ancaster, Beverly, and West Flamborough Townships was soon occupied by agricultural settlers. Although



Governor's Road was not well-travelled, the first two concessions of each township were soon filled. Wheat was the major crop for these settlers and they brought their grain to Ancaster and Dundas to be milled. Lumber was also an important product during the first years of clearing and farmers could sell their timber to several mills in the area.

11. Dundas, 1858.

12. Dundas Valley, 1812.



Along with the mills, a store, an inn, a tavern, a distillery, a blacksmith, a cobbler, and a cooperage were also established in Dundas to serve the local farmers. The development of grist and saw mills and small manufacturing establishments marked the passage from a frontier-subsistence economy to a "backwoods" economy based on the barter of agricultural produce for basic manufactured items. Mills were set up on Spencer Creek as soon as there were enough people in the locality to use them. The mills attracted more settlers, bringing an increase in agricultural production that in turn, led to an increase in the number and capacity of Dundas mills.

By 1812 there were over 200 people living in Dundas including entrepreneurs (mill and store owners), mill workers, artisans, and even professional men. The town grew up along Spencer Creek, focussing at the bridge (now Main Street). Hatt Street was opened along Spencer Creek around 1805 and was connected to the Waterloo Road at the western end of the valley.<sup>6</sup> By 1811 there were four streets in Dundas: Dundas, Hatt, York, and Hare Streets (Hare Street was later renamed King).<sup>7</sup> At this time Dundas was a small riverside village surrounded by farmers' clearings. A small stone structure, now a lighting store on Main Street, is reputed to date back to the Dundas Mills era.

Dundas remained a backwater during the War of 1812. The town experienced frequent troop movements and was a haven for refugees from Niagara but it did not suffer any fighting. The war stimulated flour production and probably led to an increase in Dundas's milling capacity.

### Dundas 1812-1850

During the 1812 to 1850 period Dundas grew from a small hamlet to a prominent shipping centre and manufacturing town. Initially, the town was over-

shadowed by a large and diverse manufacturing centre located above the Escarpment at Crooks Hollow. James Crooks, a Scottish immigrant, located on Spencer Creek in 1813,

"He then created one of the greatest industrial complexes of his time, starting with the purchase of a store and grist mill. In five years he added a saw mill, a general store, a cooperage, a blacksmith's shop, an ox-shoeing stall and a carding mill. By 1822 Crooks owned the greatest manufacturing centre in the Western Province".<sup>8</sup>

Very little remains from the Crooks Hollow development. There are just a few foundations and the ruins of the old Barber paper mill near Bullocks Corners.

In the 1830's Dundas superseded Crooks Hollow as a milling and manufacturing centre. Dundas's superior transportation facilities were probably the major factor in this development. Road connections to Dundas were improved throughout the 1812-1850 period; plank and macadamized roads (some with tolls) soon connected the village to York, Niagara, and Waterloo and Wellington Counties. More important was the improvement of water transport along Spencer Creek and the Dundas Marsh to Burlington Bay.

At first flat bottom boats were used to navigate the waterways and to transport flour and supplies to and from lake schooners in the Bay. In 1820, Pierre Desjardins, a French immigrant to Dundas, petitioned the Upper Canadian government for the marsh land in front of Lots 19, 20, 21, 22, 23, and 24, Cons. 1 in Flamborough West, in order to cut a canal from Dundas to Burlington Bay. Desjardins

received his grant and commenced work on the canal. The project was only partially completed in 1827 when Desjardins died; however, work started again the next year under the direction of Desjardins's brother-in-law, Alexis Begue. The canal's channel was completed by 1832 and by 1837 the completion of the turning basin was heralded by the official announcement of the canal's opening. The canal allowed lake schooners and steamers with a five foot draft to enter Dundas and made it the head of navigation for Lake Ontario shipping. Dundas became the outlet for products from the district west and north to Lake Huron, and the commercial hub west of Toronto,

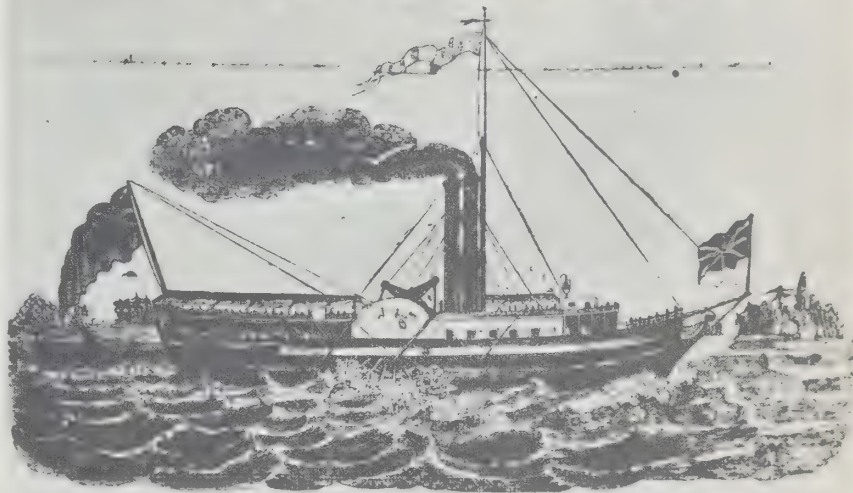
"Here was delivered the grain, produce, lumber, etc., for shipment to the larger markets, and here supplies were received. In winter when the sleighing was good, lines of teams a mile or more in length could be seen stretching along the Waterloo and Wellington Roads".<sup>9</sup>

The Desjardins Canal channel, although now unnavigable, still links Dundas and Hamilton. The turning basin has been filled-in to make a city park.

With the coming of the canal, Dundas grist and flour mills increased their capacity to meet the demand of farmers selling their flour for export. In 1838, 18,811 bbls. of flour were shipped from Dundas; in 1844, it was 64,026; and in 1849, 120,261 bbls. left the port.<sup>10</sup> By 1831 there were three major grist mills: the Wentworth, the Elgin, and the Gore, operating in Dundas. Associated with these milling establishments were oat and barley mills, distilleries, and breweries.

Sawmilling had its heyday in the Dundas area during the 1850's and the town was a major shipping point for lumber exported to the United States.

# NOTICE.



The inhabitants of Dundas take this method of informing the public and those in particular who are desirous of witnessing a great and important public work brought into operation, that they will have an opportunity of gratifying themselves on Wednesday the 16th instant, when

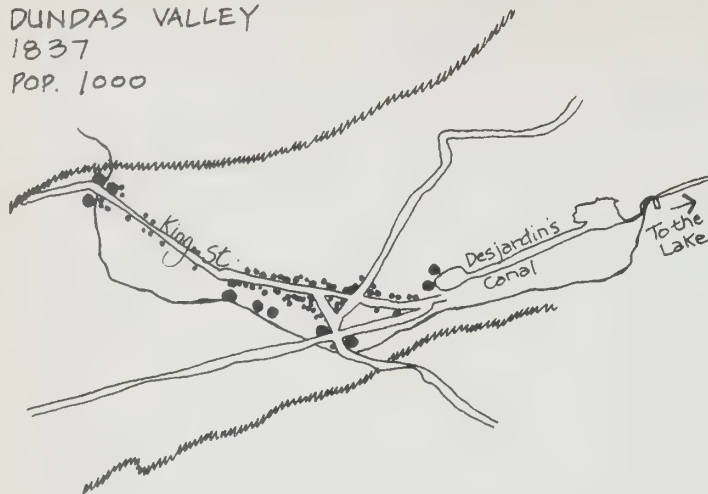
## SEVERAL STEAMERS WILL ENTER THE BASIN OF THE DESJARDINS CANAL,

And from there start on a pleasure trip to Burlington Bay and back, accompanied with the Ancaster Band.

Dundas, August 8, 1837

Along with grist and saw mills, manufacturing establishments expanded in capacity and became more diversified to meet the new markets provided by cheap transportation and an influx of mill customers.<sup>11</sup>

DUNDAS VALLEY  
1837  
POP. 1000



14. Dundas Valley, 1837.

Several tanneries operated in the area and Dundas factories produced leather goods, including saddles, harnesses, whips, shoes, and gloves. Other important products, including carriages, furniture, paper, and millstones, were manufactured and exported from Dundas.

During the years between 1830 to 1850 two industries, textile and foundry, were established that would remain the backbone of Dundas's manufacturing until the next century. Woollen and cotton mills, started in the 1850's, grew into major clothing and textile factories in the latter half of the century. John Gartshore established the first foundry in 1838 and more iron works followed. The foundries produced all kinds of machinery, pumps, engines, machine tools, agricultural implements, screws, and other ironware. The Dundas Forge building (1846) at 60 Hatt Street dates back to these times.

Dundas grew quite rapidly during the years between 1830 and 1850. Taverns, hotels, and other service facilities were built along Main Street from the Spencer Creek bridge (the old Dundas Mills) and then along King Street to cater to travellers from other urban centres and from the western hinterland. The Elgin Hotel, the Collins Hotel, and the Merchant's Exchange Hotel, all represent this era in Dundas's development.

Main and King streets were the town's main thoroughfares; as the town expanded, its structure grew up along these routes. Growth took place as a ribbon-like development along King Street between Spencer's Mills on the west and the canal on the east. Milling and manufacturing expanded along the Creek between Spencer's Mills and the Main Street bridge and Hatt Street serviced these establishments. Small connecting streets such as Ogilvie and Foundry were built in a piecemeal fashion to connect the mills on Spencer Creek to King Street. The town's development was still undifferentiated, with a mixture of residences and work places along the inter-urban routes of Main and King. There were still some farms operating between the Main-King intersection and Spencer's Mills. These farms are shown on the 1851 map of Dundas, and one farmhouse is still standing at 26 Princess Street.

Gradually two neighbourhoods began to develop out of the undifferentiated town fabric - a manufacturing area along Hatt Street and a commercial "central business district" on King Street. Modest housing for workers and commercial establishments were located between Hatt and King. Many of these houses, although often renovated, are still located in this area.

Dundas was incorporated as a town in 1847 and the Town Hall was constructed on Main Street. By 1851, Dundas's population was 3,517.<sup>12</sup> The first post





office was established in 1814, followed by a registry office, courthouse, and jail.<sup>13</sup> Churches were constructed during the 1830's and 1840's and by 1846 there were six churches, "Episcopal, Presby-

terian, Catholic, Baptist, Methodist, and one free to all denominations".<sup>14</sup> By 1851 the prominent churches included St. James (1843), St. Andrew's (18??), and Knox Presbyterian (1847).

15. Map of Dundas, 1827.

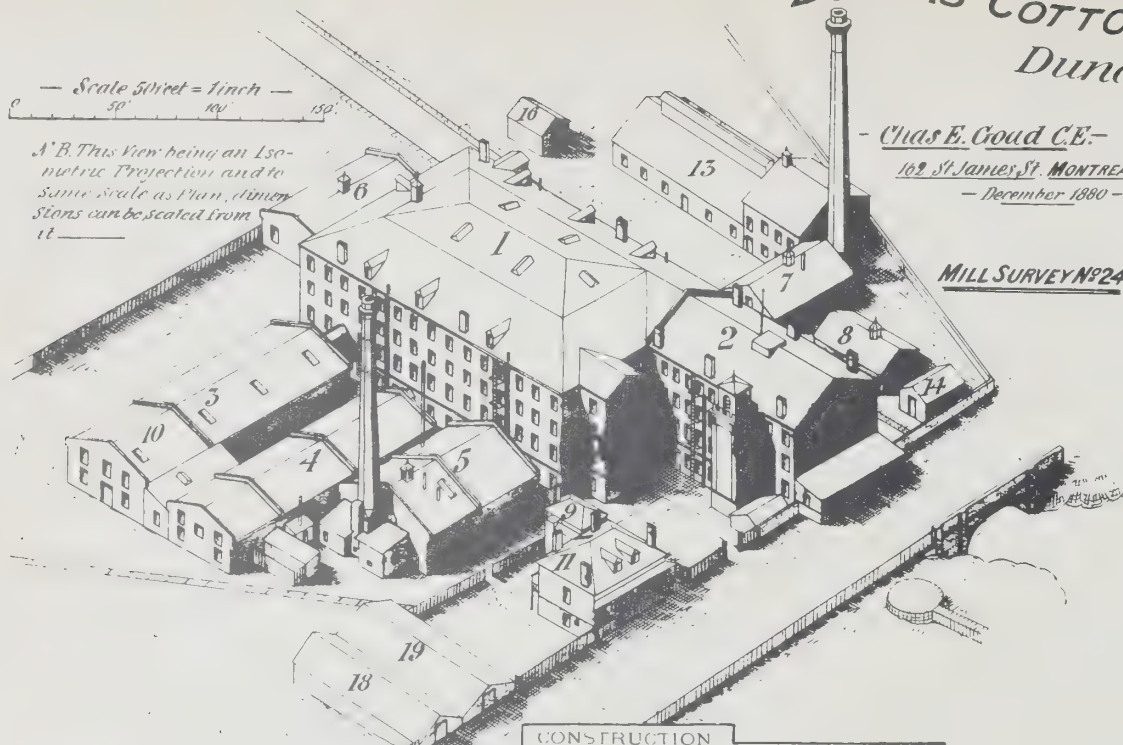
# DUNDAS COTTON MILLS Dundas-Ontario

- Chas E. Goud C.E. -

162 St. James St. MONTREAL

- December 1880 -

MILL SURVEY No 24



## CONSTRUCTION

**MANUFACTURE OF** Cotton Goods  
**STOCK** Middling Cotton  
**EMPLOYEES** 400, two-thirds girls  
**LOOMS** 450  
**HOURS OF WORK** 6.00 A.M. to 6.15 P.M. Saturdays to Noon  
**POWER** Steam  
**HEAT** Steam in Mill buildings, 1, 2, 3, 4, 5, 10, 13, Coal Stove in Office 9, Wood Stoves in Carpenters and Mach Sheds 2 and 8  
**FUEL** Coal and some Wood  
**LIGHT** Gas, supplied from Dundas Gas Works to Gasometer in No. 6.  
**OILS** Lubricating  
**WASTE** Cleaned up every evening removed to Waste Shed 16 (to be rebuilt 30 ft further away)  
**REPAIRS** Done in Nos. 7 and 8.  
**DYEING** In second floor of 13 by steam heat, and by steam-heated cylinders in east end of 4th floor of No. 1.  
**OCCUPATIONS & EXPOSURES** See plan

Mill Buildings are of solid construction, and in good repair. Walls, mostly rough on inside, white-washed, some are plastered.

**FLOORS** In Nos. 1 and 2, supported on iron columns, 1st floor: iron and wood columns above. First floor has 15 by 12 in. beams, 6 in solid flooring, and 1 in. battens over, upper floors, 12 x 2 1/2 in. joists, 1 1/2 in. flooring, filled with wood-battens on 2nd floor only of No. 1, in all floors of No. 2.

**ROOF** Heavily framed Timber Trusses to roofs of Nos. 1 and 2.

**DOORS** When of iron, are marked on plan.

**STAIRS** Two, in brick towers. (See plan.)

**ACCESS TO ROOF** By scuttle and sky lights in roofs, - not by iron ladders to stand pipes. Several portable ladders on premises.

**CORNICES** Wooden boxed to Nos. 1 and 2. Small projecting eaves on other buildings.

**HOISTS** One in brick tower, on S. side of 1, with self-closing hatches. One small, wooden hoist on N. side of 2.

**PICKER HOUSE** No. 4 Floor and ceiling sheathed with iron. Iron shutters and doors as on plan.

**MAIN BELTING** Inside No. 1. West end, parts enclosed.

### PROTECTION.

**PUMPS** Powerful Steam Pump (Holby's Rotary), in basement of No. 5, fed by 8 in. pipe from Reservoir (see plan), which is close to, and filled by, Mill Pond.

Steam Force-Pump in No. 5, with 4 hose connections.

**HYDRANTS** 4, outside buildings (see plan), worked by the large pump, through 6 in. pipe.

**STAND PIPES** 6 Four outside No. 1 (see plan), with connections at each window and on roof. Two outside No. 2, with connections at each flat.

**LADDERS** 6 Iron Stationary Ladders outside 1, 2, - one to each stand-pipe, with iron platforms each floor.

**STEAM PIPES** to each of six stand pipes as above, worked from outside; can fill all rooms in 1, 2; also in Picker Room 4. Dy. House 13 can be filled from boiler in it.

**TANK** on roof of tower east end of No. 1 is connected with hydrants, but not with stand-pipes (20,000 gallons)

**SPRINKLERS** None.

**HOSE** 850 ft. 3 in. Canvas Hose, 350 ft. in Gas House, No. 6. 400 ft. in Office No. 21. 100 ft. in Engine Room No. 5 (8 nozzles).

**SABCOCK** 1 in Carding-room, 1st fl. of 1.  
**PAIS AND BARRELS** 24 pails of water hanging on each flat of 1 & 2. 2 barrels in Carding-room, 1st floor.

**WATCHMAN** - Night Watchman has clock with six keys, driven hourly Sunday Watchman.

**ORGANIZATION** Fire Co., organized among employees, practise weekly.

16. Detail from fire insurance map, 1880.







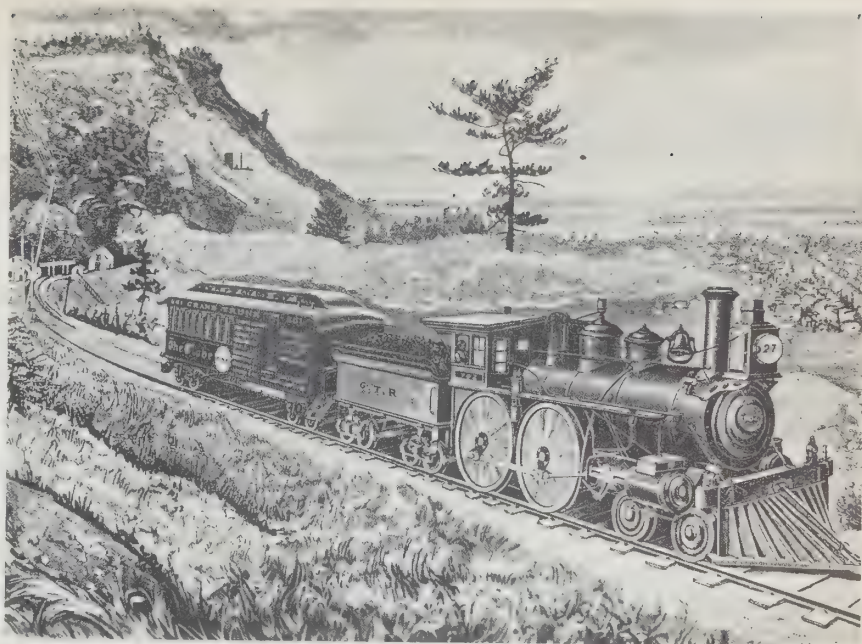
## Dundas 1850-1870

A transportation network based on the Desjardins Canal had brought growth and prosperity to Dundas. After 1850, new developments in transportation were major factors in the town's decline. In 1852, the Burlington Beach Canal was enlarged to permit entry to ships too large to navigate the Desjardins Canal, and Hamilton became the more important shipping centre. Improvements on the Welland Canal in the 1850's and the canalization of the Grand River also took traffic away from Dundas. In 1853, the construction of the Great Western Railway connecting Hamilton to western Ontario and bypassing Dundas marked the end of that town's function as a transshipment centre.

The Great Western Railway was part of a route through the United States using peninsular Ontario as a shorter route to the West. Sir Allan McNab of Hamilton and James Belle Ewart and Dr. Hamilton of Dundas were all important shareholders. Work on the section between Hamilton and London began in 1851 and the traditional route to the West via the Dundas Valley was used; however, certain difficulties were encountered,

"The section immediately west of Hamilton presented a number of engineering problems: the bridging of a marsh, a wide cutting, the diversion of a stream, the deepening of the Desjardins Canal, the construction of a bridge over it, another long bridge across a ravine, heavy embankments and formidable stretches of retaining wall".<sup>15</sup>

Originally an easier route had been planned, running south of the marsh and canal along the lower south wall of the Escarpment. The decision to build on the steep north ravine skirting Dundas was brought



about by a desire to please Sir Allen McNab and Dr. Hamilton,

18. Rail line skirting Dundas Valley.

"McNab wanted the line near or through Dundurn which he then owned, and Dr. Hamilton owned the Fisher property at Dundas. He thought that by running the line along the mountainside he could open up building stone quarries".<sup>16</sup>

The rail line to London was completed in 1853, and although the train stopped at Dundas, the station was located at an inconvenient spot on a ravine north of town. Dundas was effectively bypassed and Hamilton became the major port west of Toronto. The development of steam power allowed Hamilton to transcend Dundas's earlier industrial predominance based on water power. The city by the lake was more conveniently located on the shore with more room for expansion than Dundas's narrow valley.

The rail line and station are still located on the ravine above Dundas and the Spencer Creek viaduct. Built in the 1850's, the viaduct is still used to direct the creek under the tracks.

In 1854, the Great Western built a bridge over the Desjardins Canal and statistics collected by the port collector, based on the number of times the bridge was used, show the decline in the Canal's tonnage traffic after 1854,<sup>17</sup>

Year	Total Number of Times the Bridge had to be Drawn	Total Tonnage, Vessels Inwards and Outwards
1854	206	22,296 tons
1855	142	16,202 tons
1856	138	13,650 tons
1857	106	10,694 tons

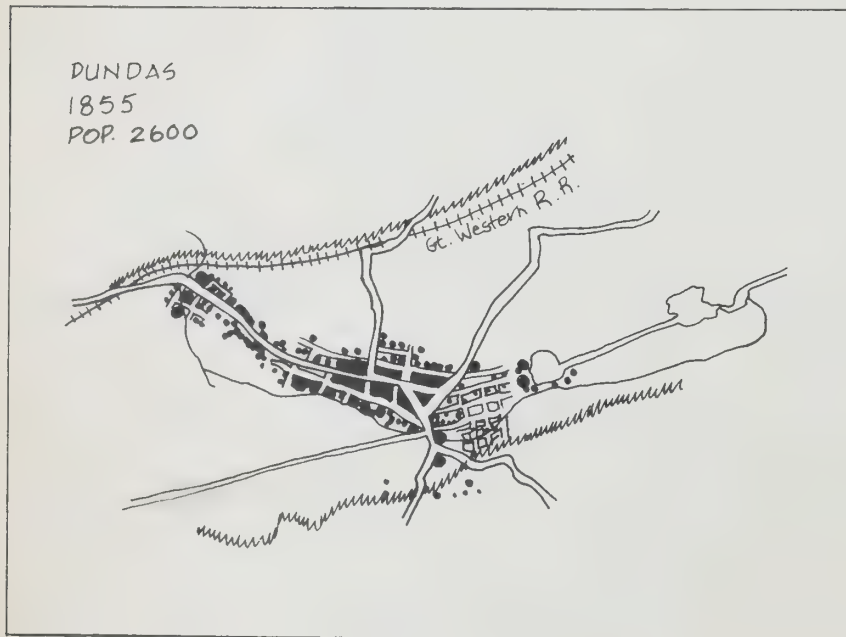
Despite the eclipse of Dundas as a major trade and manufacturing centre, the town's factories contin-

ued to prosper. Industries established prior to 1850, including textile mills, foundries, and furniture manufactures, expanded during this period and shipped to markets in Canada and the United States. In 1864, there were three or four textile mills in Dundas owned by B. McNab, Crossland and Brown, and Joseph Wright. Clothing manufacturers like Samuel Lennard and John S. Grafton were particularly successful. The Grafton Block on King Street once housed that manufacturer's operation.

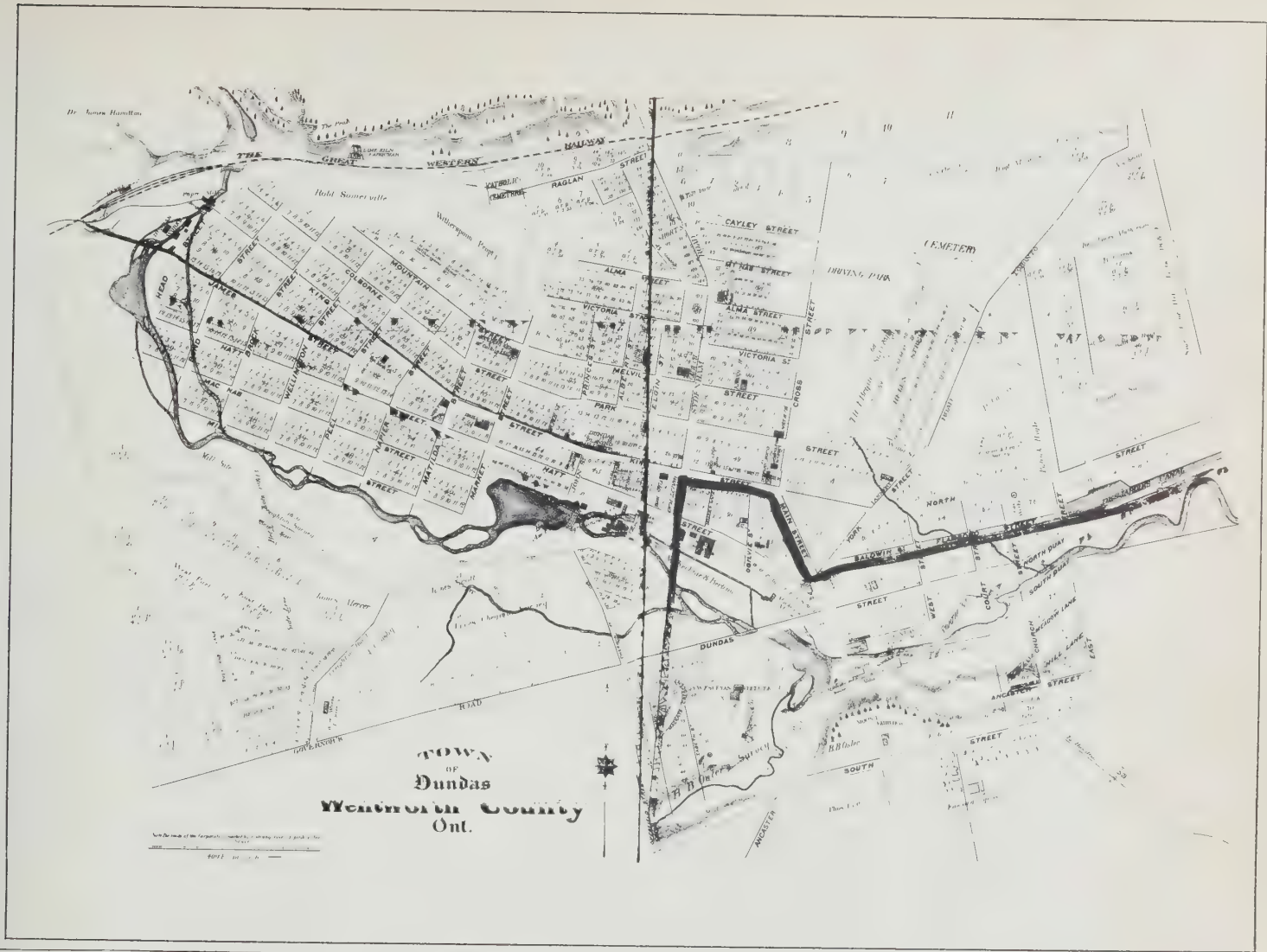
As Dundas continued to grow during the 1850's and 1860's, the town developed a more sophisticated urban form. The previously established commercial-residential area (along King Street) and industrial-residential area (along Hatt Street) were now augmented by exclusively residential neighbourhoods. The first of these began north of King and east of Sydenham (known as Brock Road) on the estate of George Rolph. Cross Street had probably been the private drive up to Rolph's homestead. Above the rise in land north of King, portions of his land were sold off for the substantial dwellings of the leading families of Dundas. Associated with these homes was the Knox Presbyterian Church (1847, rebuilt 1875), the first such public structure to be located so distant from the town's main roads. Most homes in the Cross Street vicinity today date between 1840 and 1890.

Although in 1851 settlement was still strung out along King Street, the entire width of the valley west of Cross Street, from the north slope to Spencer Creek, was surveyed into a grid of streets and lots. The east-west orientation of these surveyed blocks was most likely a response to the pincer effect of the steep valley walls. Lot sizes were 60 ft. (18.288m) wide and 120 ft. (36.576m) deep with side streets every six lots.

19. Dundas, 1855.







Between this survey and the Rolph homestead on Cross Street was the remainder of George Rolph's estate. The 1851 map of Dundas shows this area as having three east-west surveyed roads; Park, Melville, and one unnamed, but no north-south streets except Sydenham. The property line between Rolph's

holdings and the adjoining survey was aligned with the township survey grid and was at odds with the survey of town lots aligned to King Street. This created triangular shaped lots in the vicinity of Church Street.

20. Dundas, 1875.

King Street bent, pivoting at Matilda Street, from its east-west alignment with Main Street to a north-west direction up to Spencer's Mills. West of Matilda, street grids were aligned with King Street on the north, with Hatt Street south to the Creek, and with James Street taking a compromise alignment in the centre.

The 1851 map shows the original Cootes Paradise town plan still in place, but it was sparsely settled and some lots had no buildings.

### Dundas 1870-1900

By the 1870's the foundries in Dundas were producing agricultural implements, locomotive parts, steam engines, boilers, machine tools, etc. John Bertram's company later became Canada Tool Works and operates today as Orenstein and Koppel. The Canada Screw Company, established in 1871, shipped its products all over North America.

The greatest diversity of Dundas's manufacturing establishments was probably reached in the late 1880's.<sup>18</sup> During the following decade, there was a gradual reduction of commercial and industrial activity in the town. Population declined after 1890. A



21. Hamilton and Dundas Street Railway.

few major industries continued to employ many Dundas workers, including the Doolittle and Wilcox quarry (Canada Crushed Stone Works) and crushed stone plant on the north wall of the escarpment and the Valley City furniture manufacturing company located in the old forge building on Hatt Street. The town increased in importance as a residential area.

Dundas's growth as a residence for Hamilton workers probably began as early as the 1860's with the establishment of a horse-drawn omnibus line between the two centres.<sup>19</sup> This line soon folded but the idea was renewed in the 1870's and 1882 the "Hamilton and Dundas Street Railway" was advertised as the "only steam motor road in the country".<sup>20</sup> The line was eventually taken over by the Toronto, Hamilton, and Buffalo Railway and now provides freight service for Dundas's industries on Hatt and Head streets.

By 1875, the early system of town streets based on the interurban (King and Main) routes was still the main organization of the town plan, but the subdivision of the valley west of King and Main into residential streets and lots was almost complete. George Rolph's property west of Sydenham had the addition of north-south streets, Elgin, Albert, and Princess, to promote and service the residential development of the area. At Rolph's old western property line, the east-west roads were fitted together to accommodate the two differing alignments and divisions were rationalized accordingly.

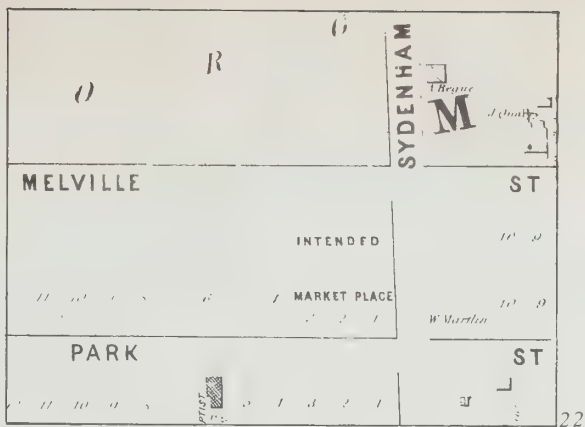
The narrow lanes connecting Hatt to King were augmented by McMurray and "Market Place" for better servicing to and from the industrial zone. The 1851 map shows an "intended market place" occupying six lots at Sydenham, between Melville and Park Streets, but this location was never developed. It was not central, not accessible to supplies, not adjacent to the activity of King Street, and it was right next to a fairly wealthy residential district.

The market exchange originally took place in and about the Town Hall. This was a most satisfactory site — passing traffic on the roads by necessity came through the market place in order to use the bridge, and the civic facilities themselves generated customer traffic. It was also convenient for inspection under the law by municipal officials. By 1875, the town fathers likely felt that the lively market section was neither decorous nor compatible with the conduct of official town business.

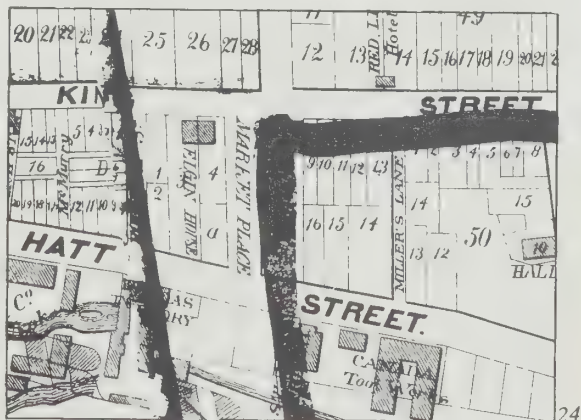
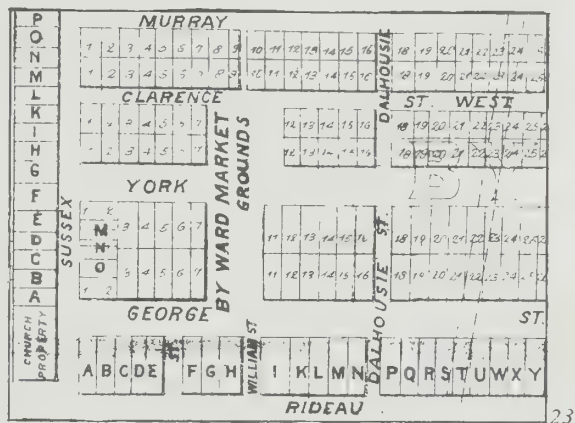
The 1851 “intended market place” block was similar in concept to Simcoe’s public reserves and this idea survived, rather modestly, in the full square block occupations of the High School and the Catholic Church, one block north of the aborted market place.

The new Market Place, rationalized into mid-block and connecting King Street to Hatt Street, was well located and served both as street and market place. Simcoe’s idealized Cootes Paradise plan showed block reserves up the centre of the plot for public uses, but unplanned vernacular Ontario towns showed the street as a multi-functional element - road and forum. Rather than specific blocks being designated for static public spaces, as in Cootes Paradise or Brantford, streets themselves were often widened to function both as access routes and as public spaces. In Dundas, the new market place: (1) increased the street access system; (2) satisfied a market place’s need for stall space; and (3) was perpendicular to the main street and able to attract activity off of it.

The arrival of the Hamilton and Dundas Street Railway in 1879 signalled the emergence of Dundas as a dormitory community for Hamilton. Many of the two- to six-lot house properties were subdivided and built upon, giving all the older Dundas residential neighbourhoods a series of building dates in a typ-



- 22. Intended market place, Dundas, 1851.
- 23. Street as Place, By Ward Market, Ottawa.
- 24. Dundas market place, 1875.





25. 9 Foundry Street, now a parking lot.

26. 7 Bay Car Wash, formerly Toronto, Hamilton and Dundas Railway building. The Hatt Street view had "T.H.&B" in contrasting tiles on the roof.

27. Demolition of car wash.

25



26



27



ical block. Much of the residential development of Dundas took place in the 1860 to 1890 period and many homes date back to this time.

### Dundas today

Dundas remains a residential and industrial town today. The curtailing of the town's growth in the latter half of the nineteenth century led to the preservation of the town's historical appearance.

As historian W.F. Moore put it,

"Dundas was an important place and only the advent of steam railways saved it from losing all its natural loveliness and becoming a great and bustling centre for trade and commerce . . ." <sup>21</sup>

The town's urban form, street pattern, and a large number of its buildings remain from earlier times because there have been few pressures to change them. It is possible to read the past and see the town's different eras by walking the streets of Dundas today. Lieutenant-Governor Simcoe's survey grid of Cootes Paradise remains in an attenuated form at the east end of town. The present system of main roads: Hatt, Main, King, and York streets, were important routes when Dundas was a port and milling centre. The Desjardins Canal and hotels and stores on King Street remind us of the 1830-1850 era when Dundas was the transshipment centre for western Ontario.

Industries are still located along Hatt Street as are the typical workers' cottages and semi-detached houses from 1850's and later that give Dundas a distinctive early industrial and urban appearance not common in southern Ontario towns. The Toronto, Hamilton and Buffalo interurban railway that helped Dundas develop as a residence of Hamilton still runs

28



30



29



31



28. Dundas Cotton Mill, before.

29. Dundas Cotton Mill, after.

30. Dundas Crushed Stone Works, partially demolished 1979.

31. On Main Street, right half demolished.

once a day (although it no longer has a passenger service). Many buildings from the 1880's also reflect Dundas's growth as a residential town. (A more detailed look at Dundas's historical resources appears in the following "Neighbourhood" sections.) Much remains in this town to reflect its history and it is hoped that the forms and structures of the past will remain in the future to preserve the unique appearance that is Dundas's heritage.

## THE DUNDAS INHERITANCE

### Housing typology

Several types of houses are commonly found throughout the town; these have been codified as Types 1 - 7. The unusual houses, those of the wealthy particularly, do not fit comfortably into these categories, although traits of the fancier homes can often be seen in the forms of the more typical homes.

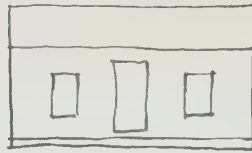
Types 1 and 2 Gabled Cottages - detached or semi-detached, 1840-WW II.

A cottage is a labourer's or villager's small dwelling. While the form of Types 1 and 2 can be seen in large homes in a few cases, the typology refers to the modest two- to four-room dwellings built by the earliest settlers (limited by finances, technology, and available materials, they gravitated to this simple form in the construction of their first log houses) through to the labourer's home of a century later. Usually of frame (but often of brick and rarely of stone), the form is largely indigenous, although undoubtedly British and American pattern books were influential in refining it, as was the Workingman's Cottage exhibit at the 1851 Crystal Palace Exhibition in London.

Types 3a, 3b, 3c

Type 3a Townhouse - "Main St." from 1840-1890

This is an appealing urban form of structure - it is two-storey, compact, and presents flat fire walls to both sides in anticipation of linear expansion of the type. Much of King St. can be seen having this form as its conceptual basis, although the most interesting and "pure" forms are adjacent to King, where commercial expansion was expected (and adjoining structures anticipated). The most appealing aspect



TYPE 1 - gabled cottage, detached or semi-detached  
- © 1830-WW II



TYPE 2 - gabled cottage, detached or semi-detached  
- © 1830-WW II



TYPE 3a - townhouse "Main St." form  
- © 1840-1890



of these brick buildings is their conceptual flexibility. Sited right up to the lot line, these buildings were meant to be able to function as homes or to have their ground floors used as shops. The loss of a superb example on Foundry Street is indeed regrettable.

#### Type 3b Georgian - pre-1830 and 1920's-1930's

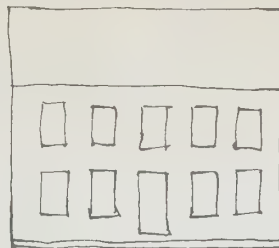
This is a general form to describe some of the nineteenth century buildings on King St and some elsewhere not really falling comfortably under the 3a designation. The suggestion is that 3b has less of a sense of style than 3a, and so would include many simple (currently aluminum sheathed) frame structures. The twentieth century version of the 3b form is completely different in scale and proportion: large brick Georgian-revival houses.

#### Type 3c Georgian Terrace - 1850-WWI

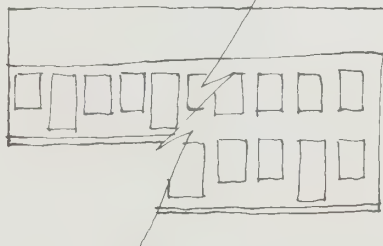
Because of its strong economic base in milling and manufacturing, Dundas has a good representative number of the row or terrace houses that served as homes for the (frequently transient) labour force. These terraces are, along with Type 3a, a distinctive architectural legacy for the town. Few other Southern Ontario towns have similar numbers and concentrations of these structures.

#### Type 4 Regency or hipped roof cottage - 1835-WWII

This type was built concurrently with Types 1 and 2, although the Type 4 is less indigenous in its form. The exported colonial cottage was a picturesque and romantic form that found favour with better-off British immigrants' sense of rustic life on the frontier. Stripped of its more stylish elements, such as a trellissed verandah and the elaborate door surround, the form filtered down to the working classes.



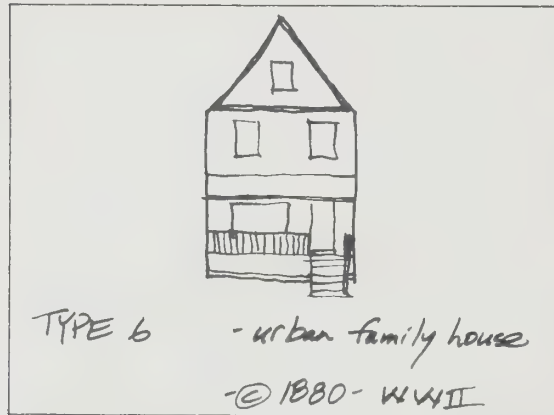
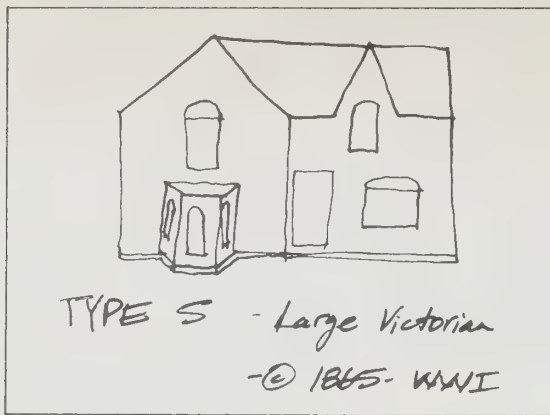
TYPE 3b - Georgianesque  
- pre 1830 & 1920's-1930's



TYPE 3c - Georgianesque terraces  
- © 1840 - WWI



TYPE 4  
- Regency or hipped-roof cottage  
- © 1835 - WWII



### Type 5 Large Victorian - 1865-WWI

Large Victorian represents most large late nineteenth century and early twentieth century dwellings. The Dundas houses are largely vernacular conglomerations of the various "styles" - Italianate, Gothic Revival, Queen Anne, and Romanesque.

### Type 6 Urban Family House - 1880-WWII

A general type describing modest family dwellings, Type 6's were built in frame, brick, or concrete block. With a frontage of less than 30 feet, they were a response to the fairly narrow sub-divided lots, and were built high and deep. The form allows a floor area larger than the lot size and was suitable to families requiring more space than the cottage form could generally provide. Unpretentious in detail, Type 6's usually included verandahs and the gable, end to street, was frequently covered in shingles.

### Type 7 Ontario Dormered - 1925-1955

Type 7's represent the more prosperous homeowners as opposed to Type 6's. More picturesque elements, descendants of the Type 5 features, such as long steep gables, dormers, bay windows, and facade material variations make their appearance.

## Cross Neighbourhood

### Estate Lots on the Hill

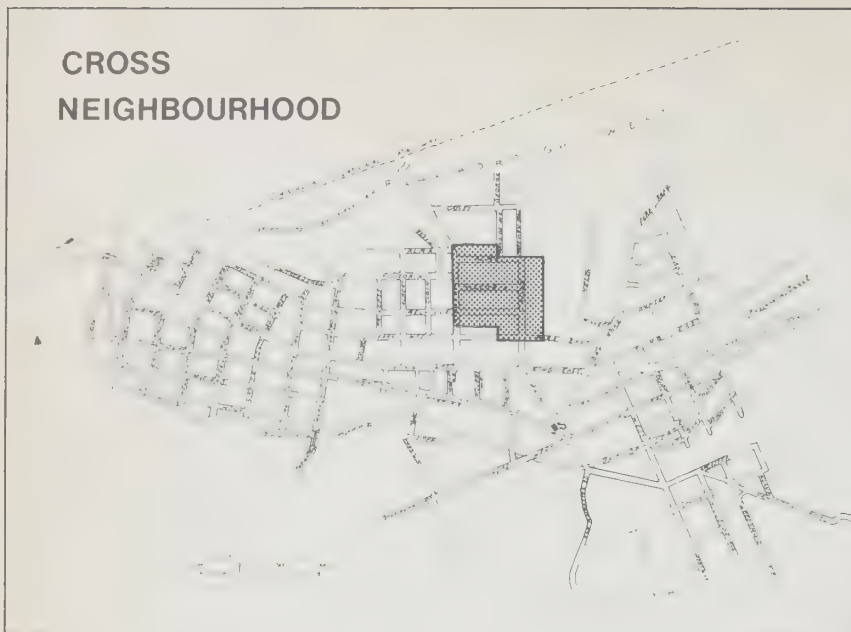
The Cross Neighbourhood is the smallest of all Dundas divisions and is characterized by the number of well-preserved, large, late-nineteenth century homes of the well-to-do. As the "History and Development" section has outlined, this area north of King Street was the first exclusively residential neighbourhood in Dundas. The estate of George Rolph, on a rise of land north of the town centre, was subdivided into plots for the leading families of Dundas - Mayor Coleman, and the Notmans, McIntyres, MacKenzies, and Begues. The area was ideal for this kind of settlement; the Rolph estate was a short walk from the commercial enterprises on King and the industrial sites on Hatt so the mercantile and manufacturing notables could keep an eye on affairs (J. Coleman owned numerous properties on King), yet the homes were adjacent to the Sydenham Creek basin and had the forest and escarpment behind. These physical advantages helped support the establishment of a social enclave of the wealthy. The Rolph house, pre-dating the development of the district, physically blocked off a route north along Cross Street and subsequently the house was moved to the east side of Cross. The eventual destination of Cross was the Driving Park, an area for promenading in horsedrawn carriages, a recreational pursuit of the Cross Neighbourhood inhabitants and an attraction unlikely to experience everyday traffic. The "intended market place" on Sydenham Road shown on the 1851 map was never realized, perhaps owing to the Cross Neighbourhood homeowners' objections, and the subsequent church and school west of Sydenham effectively gave the zone a solid western boundary. Natural boundaries - the creek valley, the hill between Park Street and Melville, and the escarpment - were augmented by the subsequent development pattern.



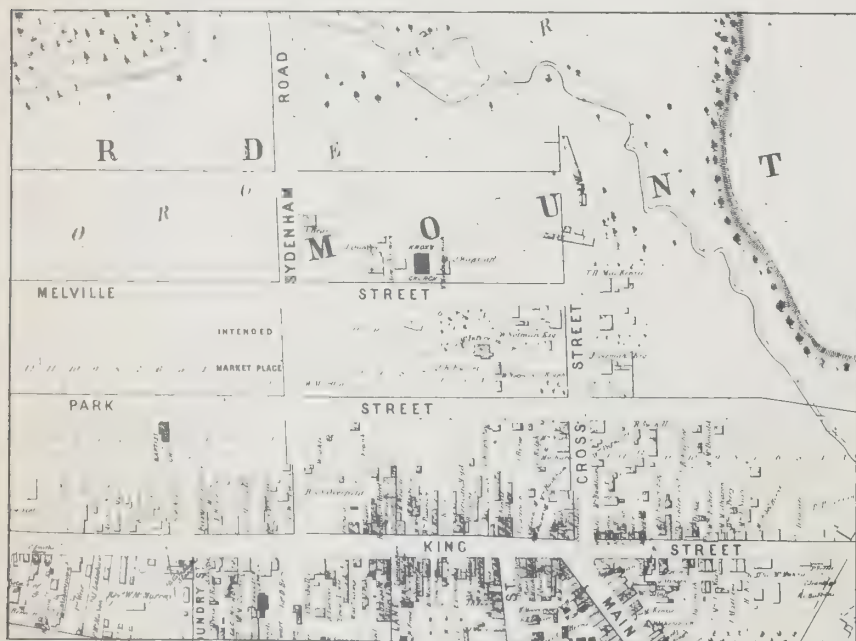
41. Dundas Neighbourhood Zones.



## CROSS NEIGHBOURHOOD



42



43

42. Cross neighbourhood.

43. Cross neighbourhood.



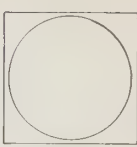
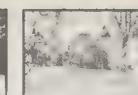
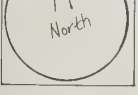
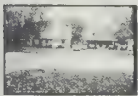
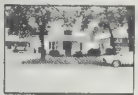
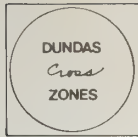
44



45

44. Dundas Driving Park,  
1896.

45. Cross neighbourhood,  
1875.



A Boyle's home  
pre 1851

- Type 3b  
- 1920's  
or 30's

ALMA

Semi-detached  
Sydenham Lodge  
in 1896

ESCAMBERT

Sydenham Creek

Contextual housing  
1970's conglomeration  
of early forms.

The  
Driving  
Park

- large upper middle class  
homes circa 1880-1890's

"Walnut Cottage"

Response to hillside  
in Architectural form.

"Melville Lawn"

MELVILLE

VICTORIA

CROSS

Sunday school

church

PARK

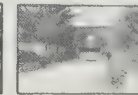
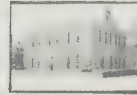
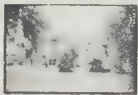
W

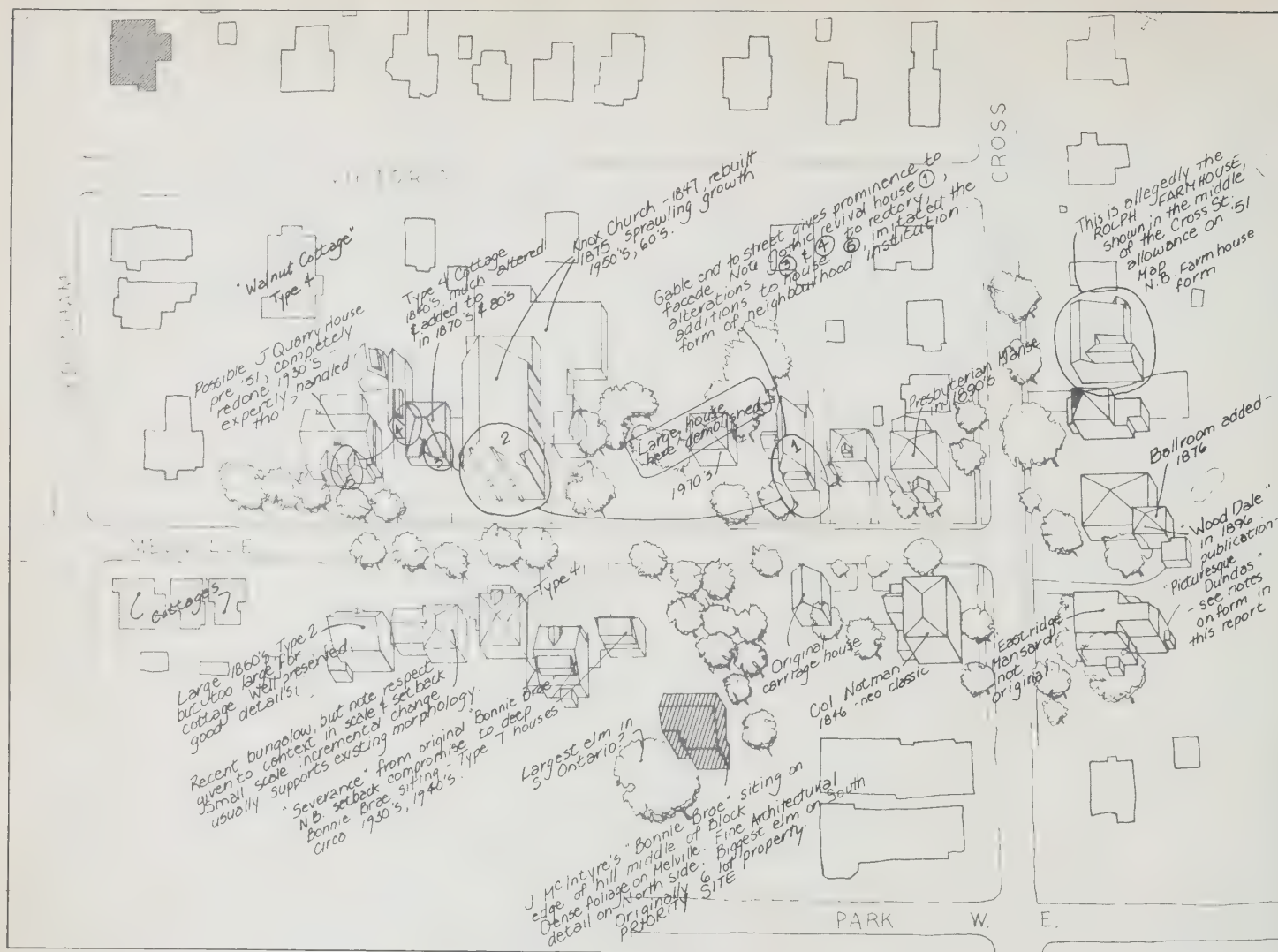
E

the hill

Site of Mayor James Coleman's  
house circa 1851 (demolished)  
replacement dwelling similar  
to original. J.B. Grafton  
owned original in 1896.

p = pre 1851 houses  
on Cross, Melville.





47. A typical block in the Cross neighbourhood.



## Streets and Roads

The routes that serve this zone were based on existing or previous lines of circulation. Cross Street was likely George Rolph's private drive, and Sydenham Road, known as the Brock Road, headed up out of the valley to Guelph. The east-west road allowances shown on the 1851 map were part of the initial subdivision of Rolph's property. The area west of Sydenham acquired north-south streets after 1851, but the Cross district was already established and the powerful group therein would have resisted these intrusions.

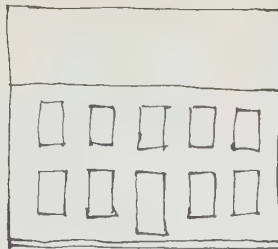
## Lots and Land Use

The initial lots in the development appear to pre-date the 1851 map pattern of street grids and 60 ft (18.288m) and 120 ft (36.576m) parcels. The Coleman, MacKenzie, and Notman estates are of this type; in fact, the 1875 map shows no lot divisions or numbers on the east side of Cross. By 1851, the area north of Melville was being filled out by residences erected within the new lot framework and by Knox Church. After this date, Rolph's residence in the middle of Cross Street was moved to the east side. The generous lots of the district show trees, gardens, orchards, curving drives, and out-buildings on the 1851 map.

The view today shows identical land use to 1851, with many surviving structures. The west end of J. McIntyre's estate was severed and Knox Church has acquired additional lots. The pattern of streets, lots, buildings, open space, and vegetation has remained intact over 125 years.

## Houses

Of the seven types outlined in the Housing Typology section, only the Types 3b: Georgian; 4: Re-



*TYPE 3b - minor component*

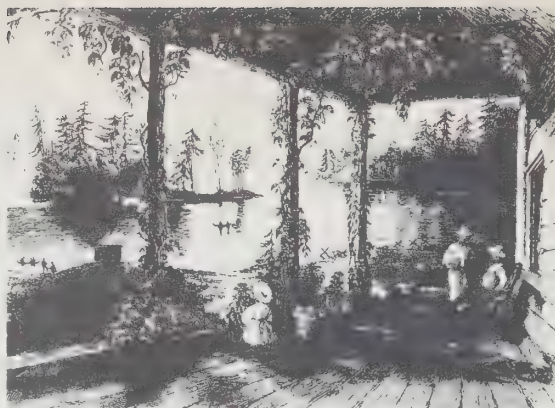


*TYPE 4 - major component*



*TYPE 5 - major component*

51. "Inside Out, Outside In".



51

52. "Woodale", residence of the late Col. T. H. McKenzie, 35 Cross Street.



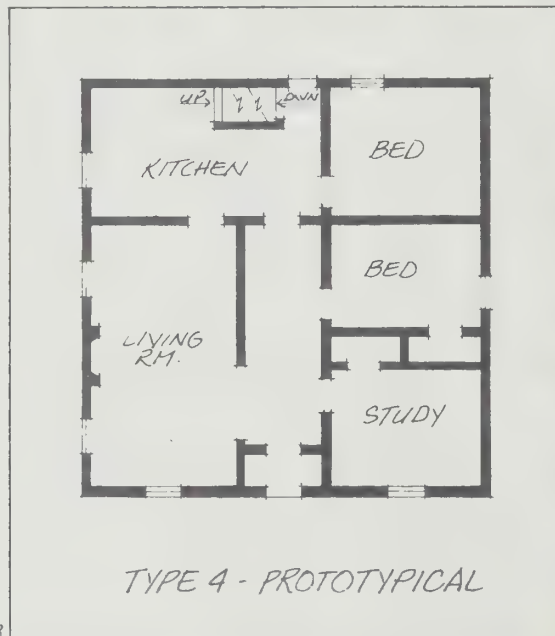
52

53. Type 4, prototypical.

54. "Walnut Cottage", residence of T. H. A. Begue, 30 Victoria Street.

55. "Melville Lawn", residence of F. J. S. Grafton, 45 Melville Street.

56. Presbyterian Manse, 1 Melville Street.



53



54



55



56

gency cottage; and 5: Large Victorian, have any kind of representation within the district. This being a neighbourhood where the architecture reflects the wealth and status of the residents, the dwellings are normally not typical of the predominate house types found in the town as a whole.

There are two architectural themes exhibited in the house forms of the Cross Neighbourhood. Most of the early dwellings attempt to evoke a romantic image of country life on the edge of town. This rustic picturesqueness, intrinsic to Type 4 houses, is best illustrated in T.H. MacKenzie's house at 35 Cross, with a low, ground-hugging building-massing and informal vegetation planting (asymmetrically placed trees and heavy foliage along the verandah) in a generous garden space. The large, strong fence is meant less to define a boundary than to tie the composition of trees, sidewalk-lined balusters, verandah, and house together. The duality of home and countryside - outside coming in, inside spreading out - is the image evoked. This area of town was the "Mountain Ward" and homes were named suitably romantic and rustic titles - "Wood Dale", "Walnut Cottage", and "Bonnie Brae".

The second theme, running concurrently with the first but more in favour *circa* 1880, is represented in places like "Melville Lawn", "Maple Lawn", "Lawnview", and Notman's 32 Cross Street residence. The names themselves suggest well-groomed and subservient nature as opposed to nurtured rusticness. The buildings accentuate formal geometry and imposing vertical massing, and are usually two storeys. Verandahs and other gestures to the garden are infrequent features - the line between inside and outside is well-defined.

#### Important Heritage Resources

The structure with the highest priority for preservation in the Cross Neighbourhood is 12 Melville



57. "Bonnie Brae", 12 Melville Street.

58. 12 Melville Street, demolished 1979. The "biggest elm tree", pictured here, was saved.



Street, also known as both the William McIntyre House (1851) and "Bonnie Brae" (1896). The house is a fine example of a pre-1851 residence in Dundas's first residential neighbourhood.

The house has an unusual siting on the middle of a steep slope with one and a half storeys fronting on Melville Street and two and a half storeys on Park St. Dominant stylistic features include large triple chimneys at either end of the gable roof, return eaves, large Venetian windows with label mouldings, a front door with side and transom lights and a neo-classical portico, and French windows on the west side of the first floor. The structure is historically





59. Park neighbourhood.

and architecturally significant and it is endangered. The owner had suggested plans to tear it down and build a senior citizens' residence, or to subdivide the site into six smaller building lots. The structure is a key landmark in the area and attempts should be made to conserve it.

There are several cottages of noteworthy architectural significance in the Cross Neighbourhood that also merit conservation. Cottages in this zone are larger and more elegant than their Hatt or Park zone counterparts. These cottages are all located on Melville Street at 31, 42, 44, and 46.

There is one nice example of a semi-detached house in the Cross Neighbourhood at 63-65 Sydenham. Although typical of Dundas, this type of structure is not common in the upper-class Cross Neighbourhood as it was most often used as workingmen's housing.

The Dundas Local Architectural Conservation Advisory Committee has recommended several Cross-zone houses of architectural significance for preservation, including: 31 and 33 Melville Street, and 22, 32, and 35 Cross Street.

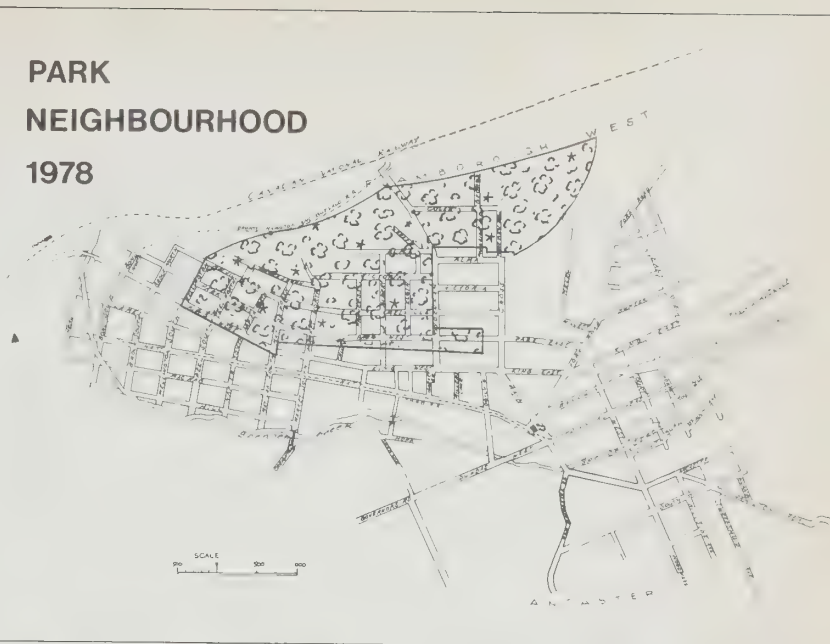
## Park Neighbourhood

### The Home and School District

The Park Neighbourhood takes in a quarter of all of Dundas and is almost exclusively residential. Backing onto the forested hilly area at the base of the escarpment, the zone was subdivided by 1851 but not really settled until later. Town development at this stage was still strung along the Dundas to Waterloo Road (King St) and the Park Neighbourhood, to the north of this route, contained very few modest dwellings, the Robert Spence and J. Thompson estates, and, behind the downtown King St buildings, the School House and Baptist Church. These latter institutions laid the foundations for the home-church-school character of the district. By 1875, Princess, Albert, and Elgin Streets had been laid out in the north-south direction over George Rolph's holdings west of Sydenham Road, and the dominant blocks of lots were held by the Union High School (now Dundas Central Public), Catholic Church, and Baptist Church. Still later came St. James Anglican Church, the Separate School, and Parkside High School.

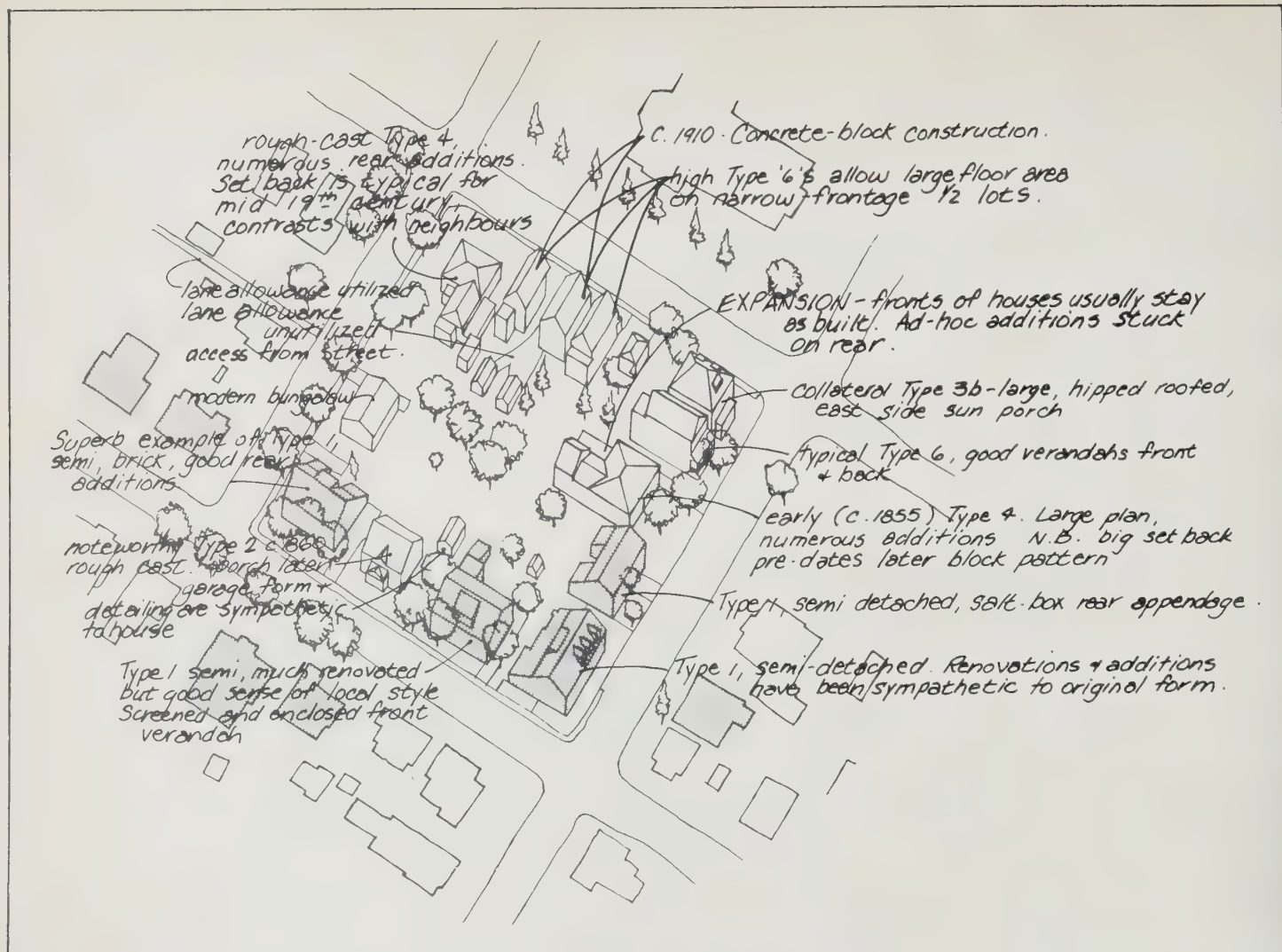
## PARK NEIGHBOURHOOD

1978



60. Park neighbourhood, 1978.

61. Park neighbourhood, 1851.



62. A typical block in the Park neighbourhood.



## Streets and Roads

The Park Neighbourhood encompasses approximately the 1851 “Valley Ward”; its linear shape being defined by King Street and the escarpment face. Park and Melville Streets were part of the *circa* 1850 survey, along with the western north-south streets - Napier, Peel, and Wellington. Logically enough, the earliest post-1851 houses in the district are found just off King Street, mostly on Park and the connecting north-south streets. Matilda Street is a pivot point for both the street grid alignments and the character of the neighbourhood’s built form. East of this point the area is influenced by the large, solid institutional uses, and the Cross Neighbourhood style. There are some homes as grand as the Cross models, but even the more modest Type 4 Regency cottages and terrace houses are neat and solid. West of Matilda, the homes are generally smaller and less often of brick or stone.

## Lots and Land Use

Public institutional uses have expanded their lot holdings since the last century - the Central school now occupies the entire block - but the neighbourhood pattern has remained consistent. Characteristic blocks have on lot occupancies by Type 5: Large Victorian houses or Type 1: Semi-detached cottages; Type 1 and 2: Gabled cottages, Type 4: Regency cottages, and Type 6: Urban family houses, are usually found on subdivided lots. Access behind the dwelling is almost always from the street by means of driveways; the only exception is the Albert-Park-Elgin-Melville block that has a service laneway from Albert to Elgin.

## Houses

The Park Neighbourhood contains a good number of semi-detached Type 1 and 2: Gabled cottages from 1860-1890 period, the greatest concentration



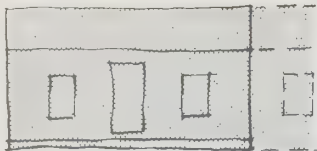
63



64

of Type 4: Regency cottages in town, and many Type 5: Large Victorian, Type 6: Urban family, and Type 7: Ontario dormered homes. Exceptional homes include the Gothic Revival examples of 16 Sydenham and 39 Elgin (*circa* 1860) and the “oversized” cottage of James Scott, the builder of Town Hall, at 146 Park.

Park Neighbourhood houses generally were characterized by superb gestures to the street in the form of porches, projections, and gardens. Most hedge and fence delineations shown in 1896 photos have disappeared; presumably they were too difficult to maintain. Nevertheless, roughcast and brick Type 1:



*Type 1 - major component*

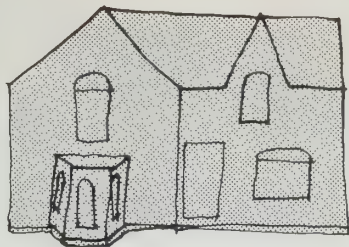


*Type 2 - major component*

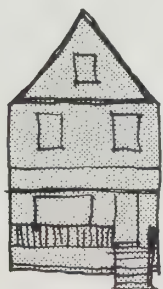


*Type 4 - major component*





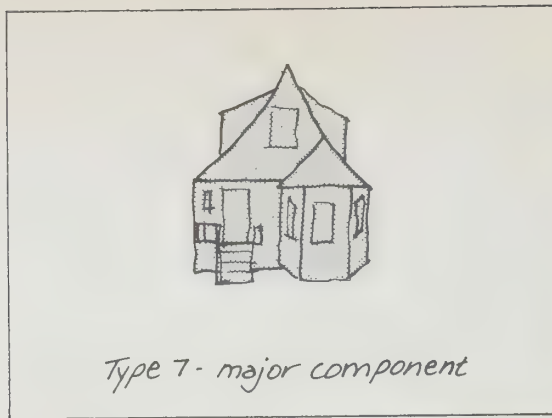
*Type 5 - major component*



*Type 6 - major component*







71



72

71. 16 Sydenham Street.

72. 39 Elgin Street.

73. 146 Park Street West.

Gabled cottage and Type 4: Regency cottage houses are still the dominant domestic image of the neighbourhood. Homeowners, recognizing the inherent value of these structures, have frequently refurbished and renovated with a strong sense of local history and architectural style. This attention to the past has helped retain the historical character of the neighbourhood.

#### Important Heritage Resources

Besides the aforementioned Gothic Revival houses at 16 Sydenham Rd and 39 Elgin Street, and the



73

large and gracious cottage at 146 Park Street, there are many other noteworthy houses in the Park Neighbourhood.

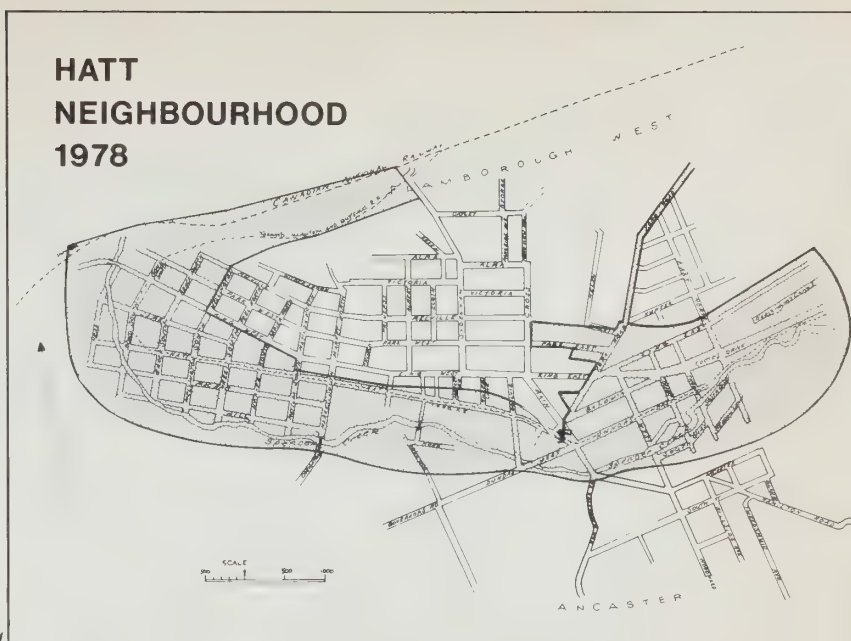
Semi-detached houses are quite common in this neighbourhood. This type of residence illustrates the early industrialization of Dundas and the consequent development of rental-housing for Dundas workers. The list of semi's in the Park Neighbourhood includes: 35-37 and 41-43 Market Street; 112-114, 116-118, 136-138 and 150-152 Melville Street; 44-46, 91-93, 101-103, 100-102, 109-111, 115-117, and 224-226 Park Street West; 24-26, 25-27, and 30-32 Sydenham Road; and 53-55-57-59 Victoria Street.

There are also several good examples of typical cottage architecture in the neighbourhood, including: 34 Sydenham Road; 97 and 220 Park Street West; 50 Albert Street; 166 Melville Street; and 8 Market Street.

## Hatt Neighbourhood

### Spencer Creek as a Structuring Element

The Hatt Neighbourhood is the largest in Dundas, covering about half of the town. It runs from the original Cootes Paradise townsite and Desjardins Canal basin area on the east to the District High School and dam on the west. The three original nineteenth century settlement sites — Cootes Paradise, Dundas Mills, and Spencer's Mills — are all incorporated into the neighbourhood. All three sites owed their existence to the Spencer Creek waterway. It was used for transportation (as an access route from the lake to the military road), and for power (the mills). The ensuing Hatt Street development was a response to the advantages of industrial locations along the Creek. Entrepôt and further industrial activities grew up around the Desjardins Canal basin, constructed in 1837.



74



75

74. Hatt neighbourhood, 1978.

75. Hatt neighbourhood, 1851.



76. Dundas Cotton Works.

77. Desjardins Canal. In 1967, this turning basin of the Desjardins Canal was filled in to create Centennial Park with its "Cactus Clock".

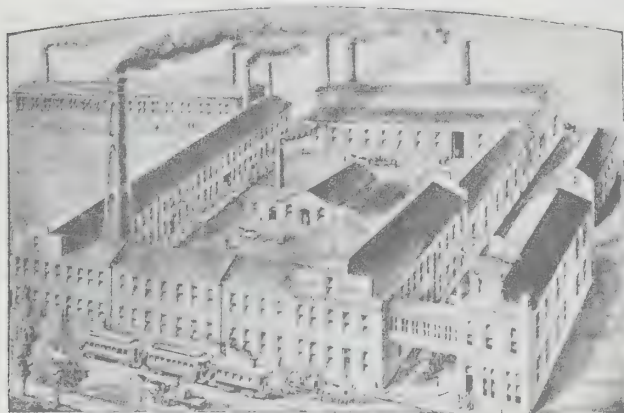
78. John Bertram and Sons Canada Tool Works.



76



77



78



79

79. St. James Church and Rectory, once located next to the foundry on Hatt Street.

80. Terrace houses on Olgivie Street.

81. The T.H.&B. Railway on Hatt Street 1977.



80



81



This industrial activity, dependent on the waterways in the nineteenth century, defined the economic and social basis of the Hatt district. By 1851, there were not only established foundries, breweries, woolen mills, and flour and grist mills, but a wide variety of community infrastructures associated with these activities — homes, churches, and taverns. (Most commercial activity was centred on King Street, a block away, relying substantially on passing interurban traffic.) In the Hatt Neighbourhood, land use was undifferentiated (unzoned) — the local church was next door to the foundry, and J.B. Ewart's mansion and gardens were adjacent to his own factories and workers' homes.

This mixed residential-industrial co-existence was most apparent along Hatt Street where numerous Type 1: Gabled cottages and Type 4: Regency cottages, along with semi-detached and terrace units, were built. In the decades following 1850, the streets and lots west of Matilda Street were developed, effectively joining the original mill settlement sites of Dundas Mills and Spencer's Mills. Adjacent to Spencer's Mills, the Great Western Railway route necessitated the construction of a viaduct and dam for the Creek.

The firmly established industrial character of the zone meant that new industries located in the area despite the dwindling influence of the waterways (both in terms of the Spencer's power and the canal as a transportation route). This process was further reinforced by the new transportation systems, which needed to get to the established industries. In the 1870's, the Toronto, Hamilton, and Buffalo Railway was laid down Dundas Street, westward up the middle of Hatt Street, along Bond, and finally off the street grid and north-east to the Canada Crushed Stone Works. The Toronto, Hamilton, and Buffalo route reinforced the old Spencer Creek

spine of the zone and spawned new industries and associated homes.

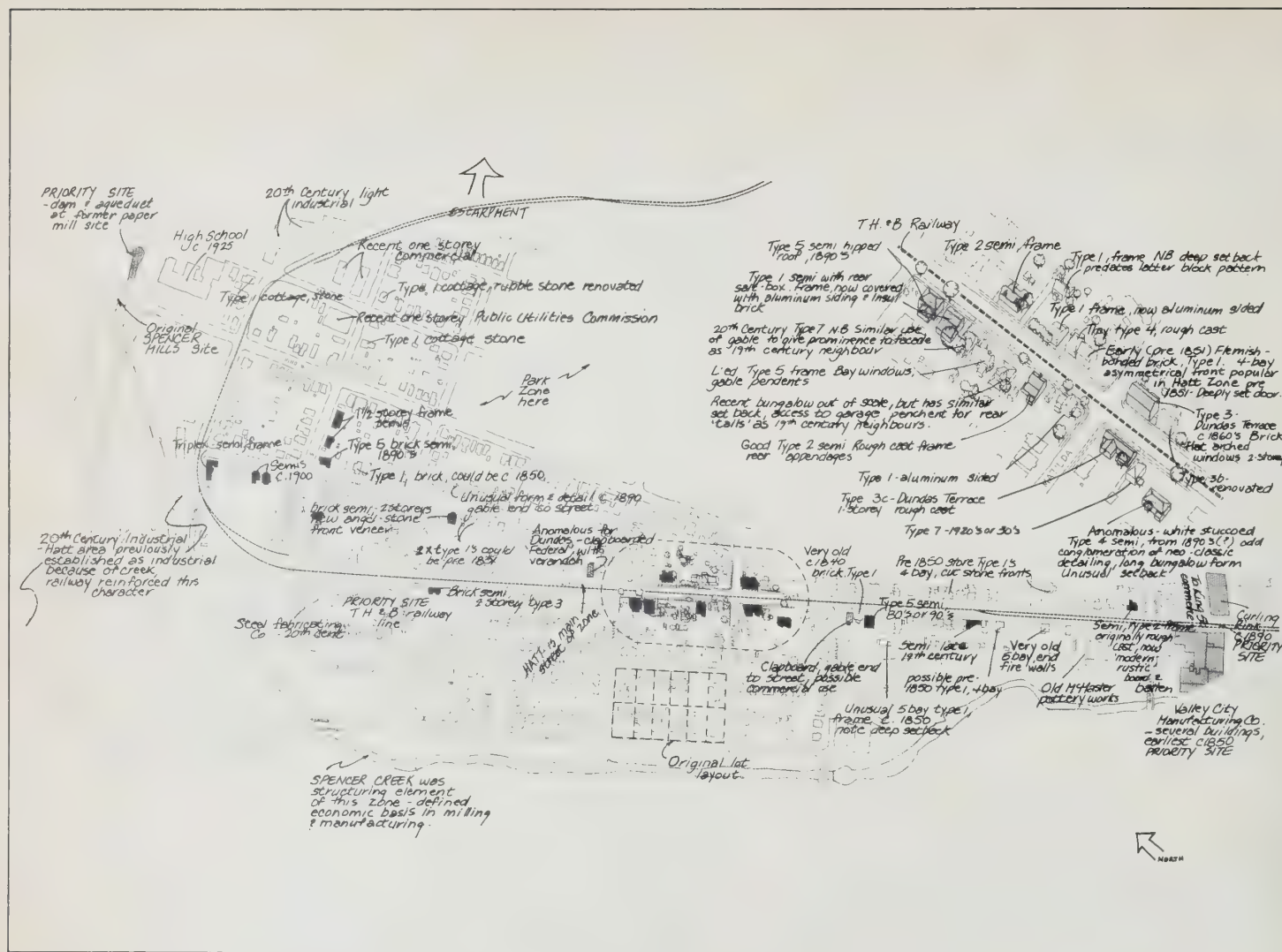
## Streets and Roads

The town's basic structure of inter-urban routes all converged at the Town Hall and original Dundas Mills site. From the Town Hall, the Main-King Street and the Hatt Street routes are equal in that both are ways to the west - but the Hatt route follows the creek more closely and becomes the primary street for the neighbourhood. Hatt was secondary in the town-wide structure and the small connections to King Street. Foundry, Ogilvie, and Miller's Lane were important links between the industrial and the commercial-service areas of town. Further to the west, the residential grid orientation was dictated by the Hatt Street alignment, as opposed to the predominating King Street influence in the alignments to the north.

The east section of the neighbourhood is structured by the original Cootes Paradise townsite grid.

## Lots and Land Use

Although the district as a whole can be characterized as mixed industrial-residential, there are certain distinct identity areas within the zone. The older industrial sites are still in use along Hatt, east of Market. Former industrial sites near the Dundas Mills bridge have been stripped of their structures. The 1860-1890 residential development predominates west of Market Street up to the west end of Dundas where there are many twentieth-century factories. Light industry in modest buildings is located along the railway tracks north of King. Open space in the zone is limited, restricted mostly to the river banks of the Spencer and Sydenham Creeks, the new park over the old canal turning basin on the east, and Witherspoon Park in the north-west.



82. Hatt neighbourhood.

## Buildings

In consideration of the zone's main economic activity, the predominant homes are modest workers' dwellings, including semi-detached and terrace housing. The most common are 1840-1890 Type 1: Frame gabled cottages; of secondary importance are Type 1: Brick and stone dwellings. The second most common group are 1845-1890 Type 6: Urban family houses and the Type 3c: Georgian terrace. More substantial residences include the Overfield and Paterson estates on the hill overlooking Dundas Street, 30 York Road, 271 Hatt Street, and 27 Market Street.

The most noteworthy industrial structure is the Valley City Forge on Hatt, while the Curling Rink and Merchant's Exchange are outstanding existing community buildings.

### Important Heritage Resources

The Hatt Neighbourhood has a wide range of heritage resources including industrial, transportation, residential, commercial, and recreational structures. The list of priority sites that merit conservation in this neighbourhood includes the Valley City Forge building; the Toronto, Hamilton, and Buffalo Railway; the Spencer Creek dam and viaduct; the Desjardins Canal; the former Merchant's Exchange Hotel; 30 York Road; and the former Dundas Curling Rink.

The most important industrial site is the former Dundas Forge building (1846), now part of the Valley City Manufacturing Company, located at 60 Hatt Street. The old cut-stone forge building is included in an otherwise continuous facade of brick buildings on Hatt Street owned by the same company. The building still has an industrial function and is used in the manufacture of furniture.

83



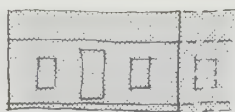
84



83. Light industry characterizes the west end of the Hatt neighbourhood.

84. Hatt streetscape with rail line.





*Type 1 - major component*



*Type 4 - major component*



*Type 2 - major component*



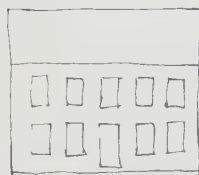
*Type 5 - minor component*



*Type 3a - minor component*



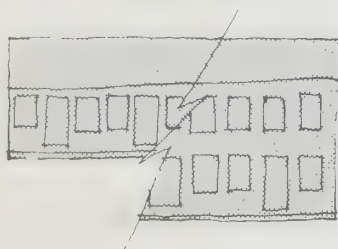
*Type 6 - major component*



*Type 3b - minor component*



*Type 7 - major component*



*Type 3c - major component*



86



87

86. Valley City Forge Building, in centre, is in cut limestone.

87. The T.H.&B. Railway on Hatt Street.

88. Spencer Creek viaduct.

89. Railway station on valley side overlooking Dundas.



88



89

The old Dundas Street Railway, now a branch line of the Toronto, Hamilton, and Buffalo Railway, with its track and signs, is another important heritage resource illustrating an important development in transportation for Dundas. The line was built in the late 1870's and runs up the middle of Dundas

Street, Hatt Street, and Head Street, and then curves north to the Canada Crushed Stone Works on the brow of the Escarpment.

Another important feature that combines industrial and transportation history is the Spencer Creek dam and viaduct. The dam was built by Joseph Spencer in 1834 at the site of the Gore Grist mills. The cut-stone viaduct was built by the Great Western Railway Company in 1858 to allow Spencer Creek to pass beneath the tracks.

The Desjardins Canal (completed 1837), also in the Hatt Neighbourhood, is a reminder of Dundas's apogee as the major transshipment centre west of Toronto in the 1830's. The canal runs from Hamilton harbour to Dundas and ends in the area bounded by King Street East, Earl Street, and Cootes Drive. The old basin has been filled in and a city park is located on the site.

The Dundas Town Hall built in the 1840's is a well-preserved reminder of the town's early prominence. Across from the Town Hall, the old Merchant's Exchange Hotel (estimated 1847) once served commercial visitors to Dundas. Another reminder of Dundas's commercial function is the oldest-dated house in Dundas (1833) at 30 York Road. This house is purported to have been the Customs House, or home of the Customs Collector of the Port of Dundas. There is one other notable commercial-type building located at 200 Hatt Street and constructed of frame with its gable end to the street. This is an unusual commercial form in Dundas, although it is quite typical of many smaller centres.

There is one heritage feature in the Hatt Neighbourhood associated with recreation - the Dundas Skating and Curling Rink, built in the 1880's. This structure at 65 Hatt Street is now used by the Valley City Manufacturing Company.



90



91

90. Dundas Town Hall, 1896.

91. Old "Merchant's Exchange Hotel".





92. Dundas "Skating and Curling Rink".



93. Typical semi-detached homes in Hatt neighbourhood.

94. Typical cottage in Hatt neighbourhood.

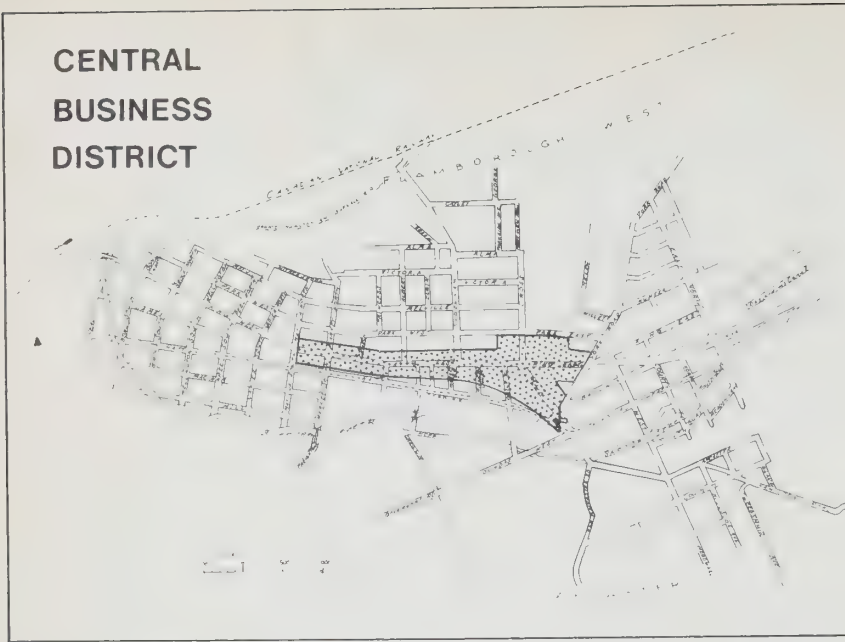
95. Overfield and Patterson Estates on Dundas Street.

96. Clapboard "Federal" style house on Hatt Street, unusual in Dundas.

97. 30 Hatt Street.



## CENTRAL BUSINESS DISTRICT



The semi-detached houses and workers' cottages related to the early industrial function that give Dundas its characteristic historical flavour are most prevalent in the Hatt Neighbourhood. A list of notable semi-detached houses includes: 12-14 and 20-22 Baldwin Street; 25-27-29 Bond Street; 9-11-13, 21-23, and 25-27 Brock Street; 12-14-16, 18-20, 25-27, 39-41, 43-45, 117, 166-170, 194-196, 226-228-230, 227-233, 220, 244-246, 253-255, 260-262, 264-266 and 308-310 Hatt Street; 14, 45-47, 52-54, and 56-58 James Street; 31-33 and 35-37 Park Street East; 17 and 31-33-35-37 Ogilvie Street; and 20-22 York Road.

The list of noteworthy cottages in this zone includes 34 Baldwin Street (N.B.: reported to be William Lyon MacKenzie's house); 6 Bond Street; 5 Brock Street; 1 Cooper Street; 45, 140, 158, 177, 198, 243, 245, 247, and 251 Hatt Street; 10, 12, 15, and 37 James Street; 7 John Street; 85 and 110 King Street East; 11 Ogilvie Street; 16 Park Street East; and 337 Park Street West.

Thirty Hatt Street near the Town Hall is one town-house in the Hatt neighbourhood.

## Central Business District

Bridge Street, now called Main Street, was the original commercial street of Dundas. The street was lined by hotels and stores on the section north of the creek, and ran south to Ancaster. When the Desjardins Canal was built in the 1830's the commercial emphasis switched from Main (Bridge) to King Street. King Street connected the canal basin to the western end of town, to Spencer's Mills, and to the Dundas and Waterloo Road out of the valley and into western Ontario. One of the first commercial structures, the Elgin Hotel, was located on King Street in the 1830's. The construction of this hotel signified the switch in commercial emphasis from Main to King Street. The area surrounding these



98. Central Business District, 1978.

99. Dundas C.B.D., 1851.



two streets makes up the Central Business District of Dundas.

### Streets and Roads

King and Main Streets are the most important connectors of the Central Business District. They were the major inter-urban routes and intensive development occurred along their lengths to cater to commercial travellers and those coming from the surrounding agricultural countryside. King Street changes direction at Matilda Street from its east-west alignment with Main Street to a north-west direction leading to Spencer's Mills. York Road, ending at the Town Hall and connected to both King and Main, was also important as the route to Toronto.

### Lots and Land Use, and Structures

The Central Business District is characterized by long narrow lots fronting on King and Main Streets. The most intensive commercial land use occurs on the east side of Main Street and on King Street between York Road and Matilda Street. West of Matilda, King Street becomes mainly residential and is included in the Park Neighbourhood.

Two- to four-storey structures line King Street with their full width on the lots, presenting a continuous facade to the street in most instances. Many of the buildings have residences in their upper storeys. Immediately north and south of King Street along connecting side streets and on King west of Albert Street is a secondary tier of detached structures supporting a mixture of uses: shops, institutions, and homes. Homes in this zone are mainly Type 3 townhouses located on Main Street, King Street East, and King Street West around Market Street.

Moving west along King Street, there are many interesting structures, including the large three-storey commercial buildings at King and Main built in the

1880's; the Collins Hotel on the north side; the Carnegie Library; the Majestic Theatre; the mainly continuous row of 1855-1900's structures on King to Sydenham characterized by carriage passageways to the area behind the shops; the Lipton Block with the three-storey Elgin Hotel and Music Hall Buildings; the Post Office on the south side; the largely continuous two-storey facades to Market Street; the Dundas Armoury on the south side of King at Market Street; and on the north side, older detached dwellings, some with the ground floor used as a shop front.

### Important Heritage Resources

The resources of the Central Business District mainly represent the commercial history of Dundas. This district is under a great deal of pressure from owners intending to redevelop their buildings and is in danger of losing its heritage resources. Three priority sites under particular pressure are the Grafton Block, the Lipton Block, and 17 King Street East. The two Block sites are key landmark features in the downtown streetscape while 17 King Street East is one of the few older buildings left on a block that has been over-developed with high-rise structures set back from the street.

The Grafton Block, named after a clothing manufacturer once located at the corner, includes numbers 2-18 Main Street, 1-5 King Street, and 1-11 Ogilvie Street. The old clothing store originally contained cutting and sewing rooms and housing for male clerks who worked in the building. The block is located on the commercial axis of town at the King-Main intersection and includes urban residential and commercial buildings. The buildings on King and Ogilvie are mainly in the brick, commercial style with a continuous three-storey facade filling the front of the lots right to the sidewalk. Sections of this block date back to the 1850's. Number 11 Ogilvie Street is detached from the Grafton con-





*Dundas St.*



*King St.*

*Market St.*

*Dundas St.*



*Market St.*



DUNDAS  
CBD  
ZONES

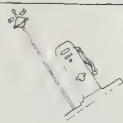
Market St.



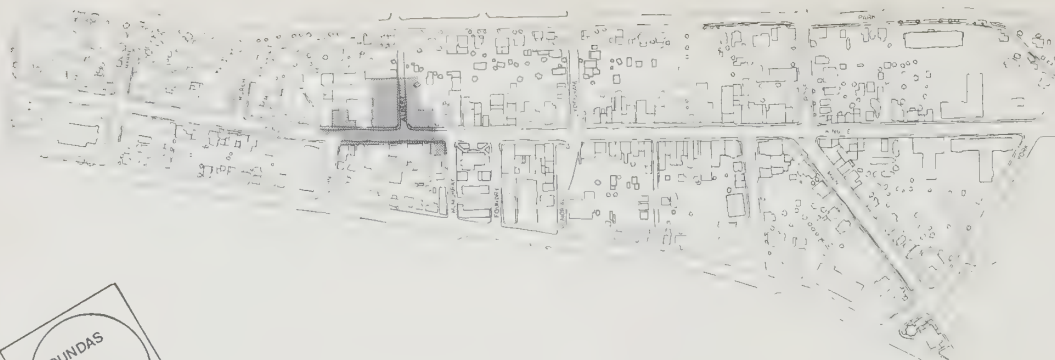
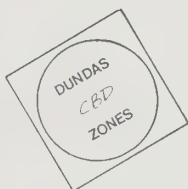
Church St.



King St



John St



*King St.*

*Albert St*



*John St*



*McHurray St*





King St

Sydenham St.

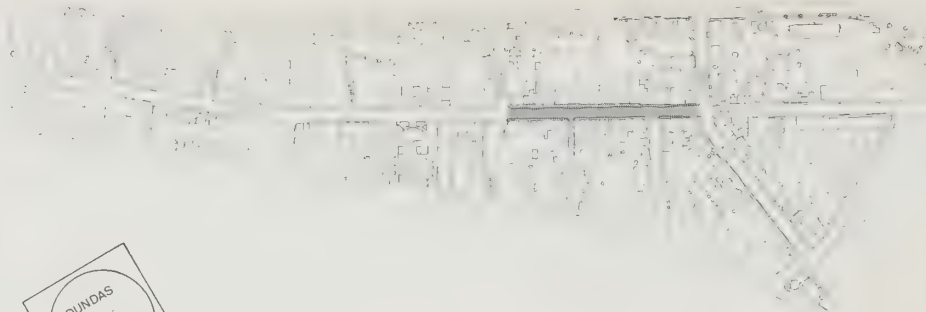


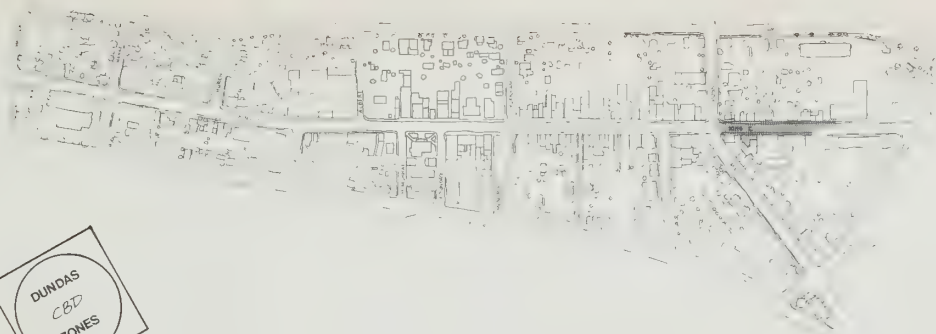
Mc Murray St

Foundry St



Memorial Square





Cross St



King St



Main St

York Road





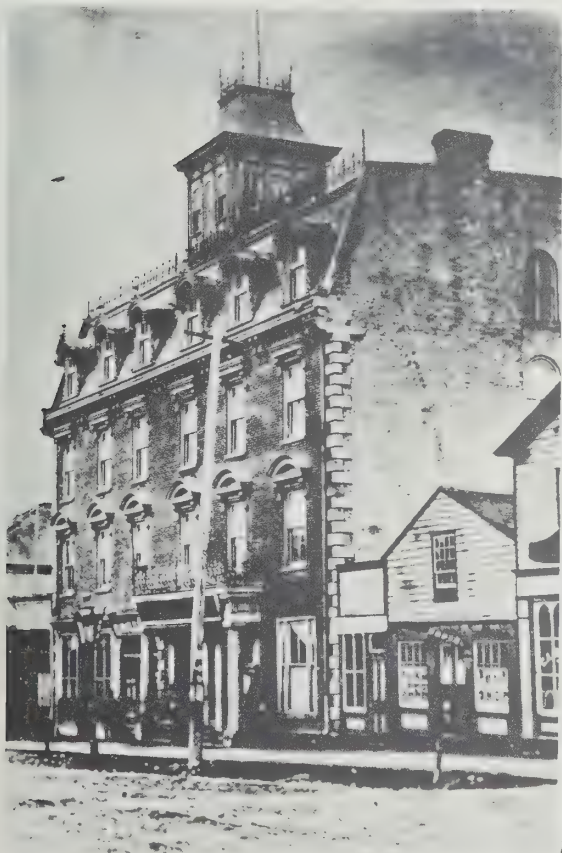
**DUNDAS  
PRIMARY AND  
SECONDARY  
TIERS**

glomeration and is a four-bay one-storey Type 1: Gabled cottage possibly constructed in the 1830's. Numbers 6-18 Main Street are some of the best examples of townhouses in Dundas. Most of the commercial buildings and some of the townhouses are no longer in use and the block is slated for demolition and redevelopment.

The Lipton Block, another commercial block, located on King Street between Memorial Square and Foundry Street, includes number 82-102 King Street West. South of King Street the block includes the old Dundas Curling Rink on Hatt Street, and

once included a fine townhouse on Foundry Street, demolished in 1977.

This key historical block includes the aforementioned Elgin Hotel built in 1837. This three-storey brick hotel building was originally constructed in the Georgian style and then renovated in the 1870's when a Mansard roof was added. The Hardware Store is a two-storey, hipped roof, frame and rough cast structure built in the 1860 to 1900 period. The bakery is a late nineteenth-century brick building of two storeys with bay windows on the second floor. The Music Hall is a brick two-storey structure built



107

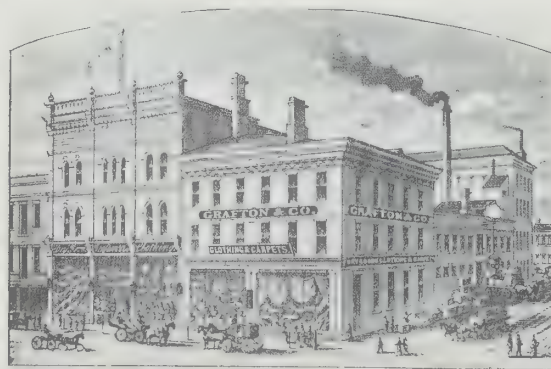


108

107. The Elgin Hotel.

108. Red Lion Hotel, 51-57 King Street West; note carriageways.

109. Grafton and Company, 4-8 King Street West.



109

in the neo-classical style in 1911. Sections of this block have been empty for years and it is also slated for demolition and re-development.

The brick townhouse at 17 King Street East predates the 1850's but was probably renovated in the 1890's. It is a lovely example of a merchant's residence in the commercial district. Several nineteenth-century structures have already been removed from this block between York Road and Main Street, and a high rise development, totally out of scale with the typical Dundas streetscape, looms over the eastern end of the block.

Most of the noteworthy townhouses of Dundas are located in the Central Business District. Their addresses are 15 Cross Street, 12 Park Street East, 10-12 King Street East, and 211, 229, and 306 King Street West.

Good examples of typical cottage construction occur at 7 Cross Street; 199, 203, 215, 217, 219, 231, 262, 268, 269, and 270 King Street West; and 7 John Street. There are also several typical semi-detached structures in this district, including 24-26, 28-30, and 32-34 Main Street and 207-209 and 250-252 King Street West.



110. King Street, c. 1856, looking east from 50 feet east of Sydenham Street.

## Guidelines for the Central Business District

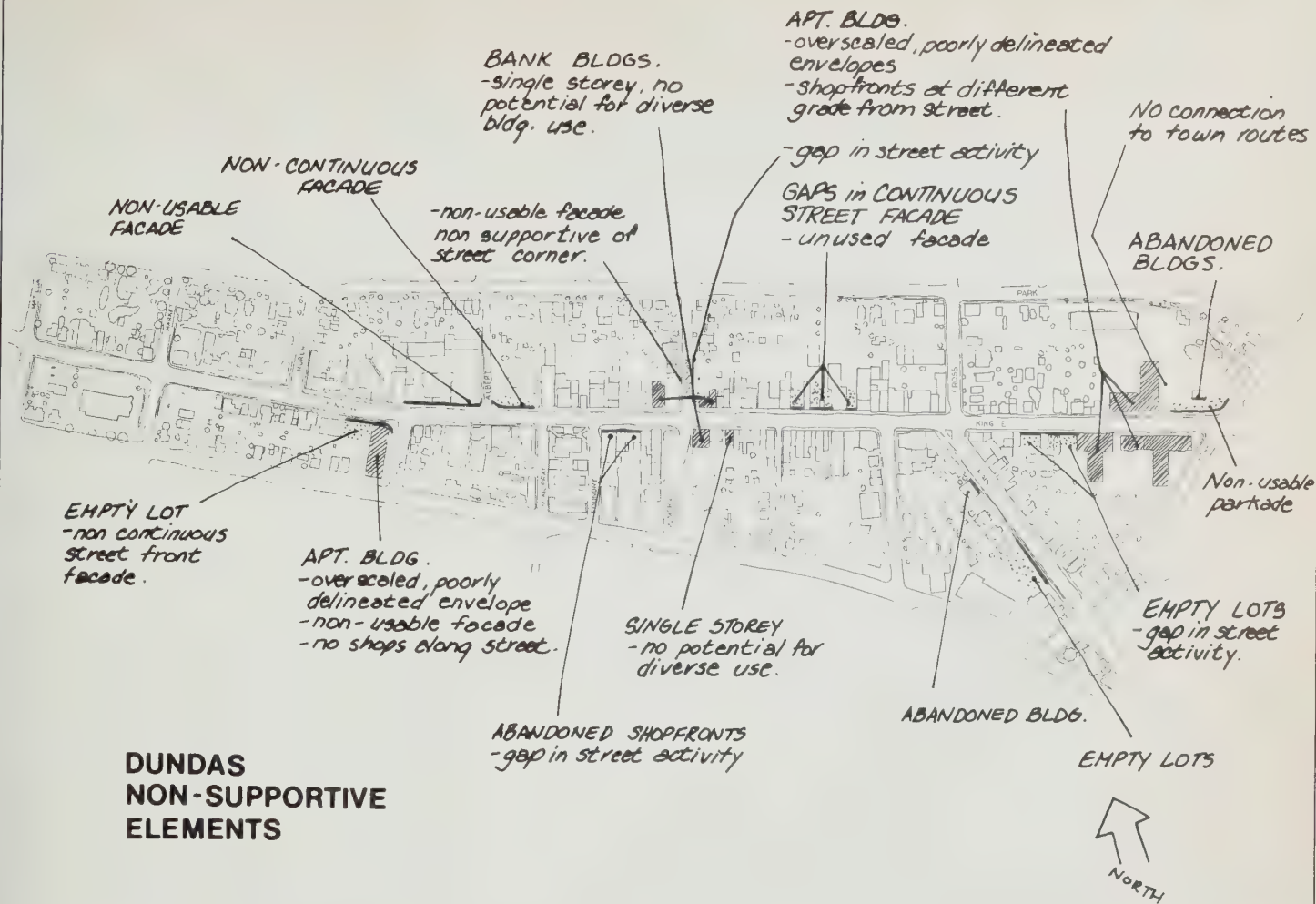
Guidelines for accommodating new development within the historic fabric of Dundas are desirable for each neighbourhood. Although any neighbourhood is subject to change and development, some are more vulnerable than others. In the Hatt Neighbourhood, for example, the plan to re-route the main Highway 8 along Hatt Street would quite probably destroy some important heritage features such as the Toronto, Hamilton, and Buffalo Railway line.

For the purpose of this case study, guidelines were developed for the Central Business District to provide an example of the kinds of strategies that can be used to conserve heritage landscapes in small towns. Dundas's commercial neighbourhood was chosen because it has experienced more development problems than any of the other neighbourhoods. It also has some of the oldest, and some of the most significant, groupings of historical buildings in town. Because of the crucial pressures on the downtown we have developed guidelines for re-development in this commercial district that both explain why historical appearances should be preserved and how to preserve appearances while still developing the commercial function of the district.

Architectural guidelines that direct such things as building height, mass, set back, siting, roof shapes, building materials, colours, and key details must be generated from an understanding of the activities supported by the present streetscape. The goal should not be to establish rigid standards for such things as cornice detailing or chimney styles based on abstract aesthetics but rather to outline guidelines based on traditional land-use and its architectural expression (function and form) that supports a high level of amenity in the Central Business District. Certainly the image of a structure, its form, style and features can be read separately from its func-



# **DUNDAS NON-SUPPORTIVE ELEMENTS**



112. Mechanics Block: a "readable facade".

113. Powell's Block, corner of King and Main Streets.

114. King streetscape.

112



113



tion, but it is the way that form and function work together that contributes to an active and amenable streetscape. There is a "kit of parts" of individual building features that collectively support a wide range of street activities. These features should be recognized and identified so that, in the course of new structures, land-uses, or renovations on particular building sites, the appearance of the entire Central Business District can benefit.

King Street is characterized by two- to four-storey structures set close to the sidewalk with shops on the main floor and residences above. The buildings are low enough to allow light to penetrate the street level, and present "readable" and interesting facades to the pedestrian. The street level viewer can "read" the various uses the building has had by viewing such things as second-storey windows and old signs on the facade. These structures do not engulf the pedestrian with a high-rising or featureless facade; rather, they have a human scale and create a pleasant atmosphere to the walker.

Structures with residences on the second and third storey support mixed use of the zone; with residents living on the upper floors, the downtown is not vacated after 6:00 P.M. This residential component makes the downtown more active later in the week-day and on Sundays, increasing the commercial potential of the area and keeping it safe. Guidelines should encourage preservation of the fabric of King Street and the way it is occupied and used by shopping pedestrians, passing motorists, and people who live on the street.

### King Street Activity

There are two kinds of participants in the activity of the street: pedestrians and automobiles. For many years there has been much concern about the problems presented by the automobile and how they can

best be handled. While the shortage of downtown parking space has been a continuing problem to retailers, the coexistence of cars and pedestrians is one of the main amenities of King Street. The continuous building facades serve to enclose a zone of pedestrian and vehicle activity, to channel it along the zone, and to compress and intensify activity on it. The enclosure is not quite wall-like, for it is open-ended and frequently punctured by side streets, lanes, and carriageways from the rear of the shops. The streetscape is a two-dimensional route as opposed to the more spacious yet more static main street in Ancaster where there are buildings with large forecourts and where there is less pedestrian activity.

This compression and intensifying of activity is reinforced by adequate but not overly generous sidewalks that serve as social condensers, increasing the opportunities for lively exchange among pedestrians and between pedestrians and cars (parking, shopping, picking up passengers and goods, etc.). This exchange takes place as well between the commercial shop fronts and passersby - picture windows at the sidewalk level attract customers, vegetable stalls on the sidewalk arrest those strolling along. The permitting of parallel parking serves a support for pedestrians and shop front activity, (getting in and out, loading groceries, unloading goods) and slows down the through street traffic.

This level of activity has persevered on King Street despite the imposition of non-supportive or jarring elements such as the modern bank buildings that are single-storey, single function buildings and the high rises at King and York Streets that are multi-storied and create another sidewalk at right angles to the street. The demolition of buildings around the Collins Hotel has further eroded the mechanisms that support commercial activity. The tools for making positive and supportive actions on the street are there, however, waiting to be recognized and used.



115. Demolished 1969, replaced by new Bank of Montreal, 81 King Street.

115

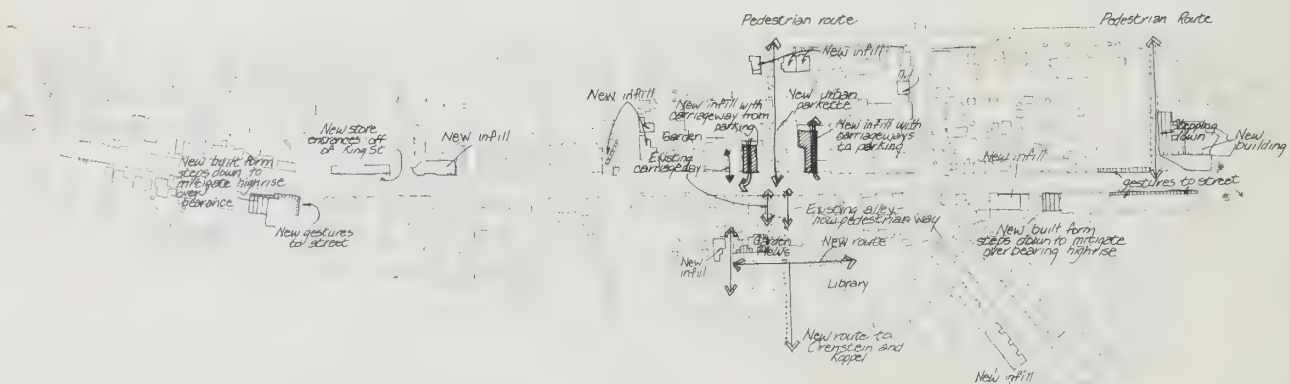


116. Demolished, replaced by new Royal Bank of Canada, south-east corner of King Street and Memorial Square.

116



# DUNDAS PROPOSED DEVELOPMENT





118. Campbell's Block, demolished 1913, now site of post office.



119. Livery Stable, 47 King Street, demolished, now a parking lot.

## Traditional Forms and Functions of the C.B.D. - Guidelines for Development

1. Continuous facades: The function of continuous facades in support of active street life has been outlined in the previous section. The removal of structures from a given block creates gaps — no-man's lands — across which it becomes difficult to attract pedestrians. A narrow gap of building facades can be pleasant — as a parkette or open market, it can act as a positive element in the streetscape. The wider the gap, the more difficult it is to pull people past it to the shops beyond.

Guidelines: Existing gaps in the continuous King Street facade should be developed — as parkettes, open markets, routes to off-street events and places, or infilled with structures supportive of the other mechanisms.

2. At-grade shopfronts, moderate width sidewalks, on-street parking: These features serve to reinforce the intense, vibrant sidewalk activities, as suggested in the preceding section — King Street Activity. The highrise buildings on King Street East near York Road have shop-front level sidewalks well back, and at differing

grade, from the street sidewalk, and walkways perpendicular to the street that end up as dead-ends, with no connections onto town routes. These development principles undermine pedestrian usage and successful commercial enterprise.

Guidelines: Reaffirm traditional forms and function (two- to four-storey multi-use structures) in the design of future developments. Create pedestrian crossing zones to facilitate pedestrian traffic and make it safe.

- 3a. Moderate building height: The significance of the two- to four-storey building height is that it allows sunlight penetration to both sidewalks for most times of the day and year, and to the north at least in the afternoon during winter. This mechanism is important for encouraging pedestrian sidewalk activity. The moderate height does not encourage creation of a high wind microclimate.

Guidelines: Ensure a high degree of light penetration to sidewalks in the delineation of building envelopes. Wind-test models of buildings that might alter the microclimate. Keep as many existing structures as possible.

- 3b. Human scale expression and usable facades: This guideline is related to building height. Implicit in the modest height of King Street structures is a notion of human scale, in which the form and details of street facades can be read as multiples of human dimension, and in which the entire details of the facade — basement building materials, wall construction, window sashes, roofline trim — can be examined easily from street level. The way the structure is used — say a shop on the main floor with a dentist's office above — can usually be understood from such a gesturing facade. In addition, being able to get into the building from the street supports sidewalk activity.

Guidelines: New buildings or renovations should provide facade treatments that suggest the structure's use and construction.

4. Carriageways — off-street parking, off-street activities, off-street routes: Perhaps the most promising urban design element is the old carriageway passages leading from sidewalk/street (at grade) back to the enormous empty areas behind the King Street storefronts. This element offers opportunities for providing off-street parking, off-street mews of shops, restaurants or gardens, or passageways to parallel streets such as Hatt or Park. The critical advantage of this proposal over alternate suggestions (such as the Regional Municipality's February 1975 CBD Study) is that active use of these carriageways supports the King Street sidewalk activity. The Regional Municipality's parking scheme would create a competing spine of activity behind and parallel to King Street, fragmenting the pedestrian traffic by permitting shop access from the rear rather than from King

Street. Using the carriageways channels all pedestrian traffic back onto the main street and contributes to the intensity of sidewalk use.

Guidelines: Develop a network of pedestrian walkways to King Street from the residential area north of Park Street by way of the carriageway passages and/or new parkettes in street facade gaps. Similarly develop walkways to the Hatt Street industrial area for noon-time connections to King for Orenstein and Koppel workers. Develop gardens and terraces behind shops with access off of King. Work out logistics for auto access to parking lots behind King and safe pedestrian access to and from lots via passageways.

5. Diversity of building uses: The variety of uses in the buildings of downtown Dundas — stores, hotels, libraries, homes, post office, restaurants, fire hall, churches, and apartments — mutually support each other. People come downtown for particular reasons but end up partaking of other amenities of the zone — a grocery shopper elects to call in at the library or someone going to pay their water bill decides to buy some ice cream down the street. Since patrons may frequent a restaurant in the evening, the street remains active and safer after the stores close. The presence of residents above the stores is an important ingredient in the 24-hour occupation of the district.

Guidelines: Encourage mixed use in the CBD. New shopfront businesses should not be constructed in one-storey structures, but should have a residential or office component above grade.



## Postscript

In the three years since the completion of this survey, Dundas citizens have continued working to preserve their heritage. Two organizations are spearheading these efforts: the Dundas Heritage Association and the Local Architectural Conservation Advisory Committee (L.A.C.A.C.).

The Dundas Heritage Association was founded in 1967 and in the past has been involved with promoting the development of the town and the conservation of its heritage by preparing publications and organizing educational meetings. Their most recent project has been a plaqueing programme which recognizes buildings of architectural and historical merit.

The Dundas Town Council with the help of the L.A.C.A.C. has designated 235 homes and public buildings under a special by-law that delays demolition for 30 days. Six houses are designated under the somewhat more stringent *Ontario Heritage Act, 1975*, that can delay demolition for up to 270 days; five more are under consideration for this latter type of designation.

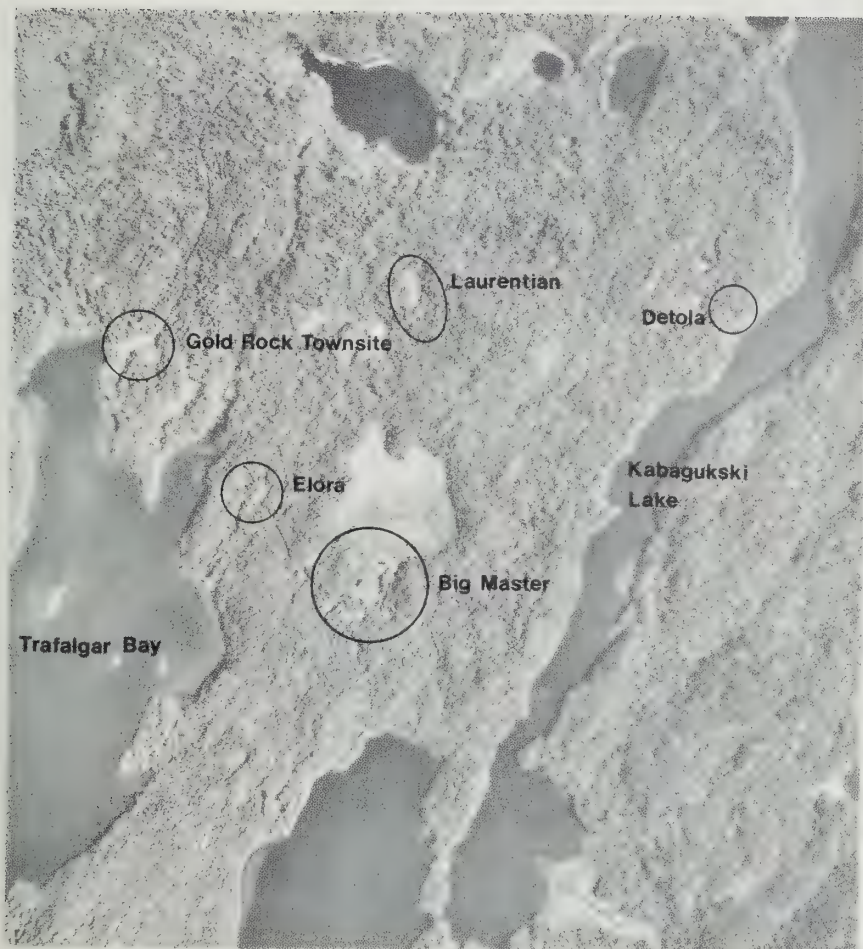
In 1978, a downtown revitalization study was completed for the town by A. J. Diamond and Associates. This report includes a retail market analysis and recommendations for transportation, parking and building, and street improvements. A Business Improvement Area has been established in the Central Business District and it is expected that some of Diamond's proposals will be implemented. Many Dundas residents feel that their downtown offers an alternative shopping area to Hamiltonians, an area with the atmosphere of a nineteenth-century town with many fine old buildings nestled in the valley.



In the meantime, several old buildings have been preserved, and more have been lost. On Princess Street, Carl Nielson has completed a remarkable restoration of his Coiffure de Paris establishment. The Elgin Hotel and Music Hall buildings have also been renovated, but in a less sympathetic manner. The Newitt Store has been torn down, and three buildings were demolished to make way for the Canada Trust Building. Several other structures are threatened with demolition, including several houses on King Street East and the Grafton Building, a lynch pin of the main street. The beautiful old house at 12 Melville Street was demolished while a campaign was successful in preserving the huge old elm on the property. Much has been lost, but much is left to preserve, if preservation effects continue the town may yet retain its nineteenth-century ambience.

120. Carnegie Library, King Street.

1. *Spencer Creek Conservation Report History*. Toronto: Conservation Authorities Branch, Ontario Department of Lands and Forests; 1962, p. 26.
2. *ibid.* p. 26.
3. *ibid.* p. 26.
4. *Spencer Creek Conservation Report*, *op. cit.*, pp. 125-131, and "Early Roads in Upper Canada," *7th Annual Report of the Waterloo Historical Society*, Kitchener, 1919.
5. *Spencer Creek Conservation Report History*, *op. cit.*, p. 48.
6. T. Roy Woodhouse, *History of the Town of Dundas*, Dundas: Dundas Historical Society; 1965, p. 16.
7. *ibid.*, p. 23.
8. J.A. Blyth, "The Development of the Paper Industry in Old Ontario, 1824-1867," *Ontario History*. Toronto: Ontario Historical Society; 1970 (June), p. 120.
9. "Early Roads and Transportation in Upper Canada," *7th Annual Report of the Waterloo Historical Society*, Kitchener, 1919, p. 65.
10. *Spencer Creek Conservation Report History*, *op. cit.*, p. 103.
11. Information on manufacturing is mainly from the *Spencer Creek Conservation Report History*.
12. Leonard L. Prior, *West Flamborough Township; a study in land utilization . . .* B.A. thesis, McMaster University, Hamilton, Ontario, 1951.
13. Roy T. Woodhouse, *op. cit.* p. 23.
14. *Spencer Creek Conservation Report History*, *op. cit.* p. 154, quoting from the 1846 "Canadian Gazetteer".
15. Russel D. Smith, "The Early Years of the Great Western Railway 1833-1857," *Ontario History*, Vol. 60, Toronto: Ontario Historical Society; December 1968, p. 216.
16. *ibid.*, p. 217.
17. *Journals of the Legislative Assembly of the Province of Canada*, Vol 990: no. 7, (1858); Appendix 29-43, no. 42.
18. L.L. Prior, *op. cit.*, p. 93.
19. *Spencer Creek Conservation Report History*, *op. cit.*, p. 149.
20. *Spencer Creek Conservation Report History*, *op. cit.*, p. 158.
21. W.F. Moore, "Dundas in the Early Days," *Papers and Records Wentworth Historical Society*, Vol. 8, Hamilton: 1919.



# Mines and mills at Gold Rock

Cultural landscape assessment and heritage  
conservation in Northwestern Ontario

Paul Campbell and David J. Cuming



2. Dense tree growth belies the fact that the Laurentian mine at Gold Rock was once an industrial landscape of mud and rock denuded of trees.



## OUR INDUSTRIAL LANDSCAPE HERITAGE

### Introduction

Ontario has a splendid variety of landscapes, reflecting the many different aspects of man's diverse past and present activities. In certain areas of Ontario, particularly in the south, these man-made or man-modified landscapes appear ordered or organized into recognizable patterns. Rural and urban areas can be clearly differentiated. Each may be characterized by a myriad of features, of interrelated elements that inform us, as observers moving in and through our cultural landscapes, where we are and what we may expect to find along the way: the main street, the shopping mall, the suburb, the countryside — all evoke familiar images and expectations. Additionally, they illustrate in many ways how the man-made landscape has evolved and changed in response to the social, economic and physical demands of society. In southern Ontario these patterns in the landscape have been firmly imprinted: township surveys, lots and concessions, roads, fields, treelines, fences, buildings, and settlement clusters all serve to reinforce the domesticating designs of man in his environment. Northern Ontario, however, has a different pattern of landscape evolution.

Since the late 1800's the northern landscape has reflected the exploitation of primary resources and the growth of transportation and communication routes. The forest and mining industries have dominated economic growth with road and rail as vital supply lines. Characteristically such an industrial base results in a distinctive landscape reflecting rapacious development. This, coupled with the equally important aspect of the frequent collapse of enterprise, results in a landscape dotted with the physical residue of the boom bust legacy; abandoned

logging camps and mines abound in various states of neglect and decay. Nevertheless, these are important components of the cultural landscape of Ontario marking clearly the various stages of growth and development in the north.

Abandoned and sometimes remote industrial landscapes often pose problems not encountered in southern Ontario, problems related to cultural landscape assessment and a differing form of land use planning. The case of Gold Rock, an old gold mining area located to the south of Dryden, serves to exemplify some of the problems associated with cultural landscape assessment and conservation in northern Ontario. Additionally, it will aid in highlighting some of the similarities and differences between assessment of a mining landscape in the north of Ontario and a pastoral landscape in the south, exemplified in E. McKenna's essay on Sandbanks, in this collection.

### The Gold Rock study

In northwestern Ontario, gold mining and milling was carried out actively from the late 1880's to the early 1910's. This industry illustrated the characteristic effects of resource extraction on the landscape: the frenzied opening of previously unexplored territory; the rapid erection of mine and mill complexes; the denudation of the surrounding land; the fast growth of small, unplanned communities; and an almost equally fast abandonment.

Within certain areas, the physical legacy of mining and milling has disappeared through neglect and

Despite the ravages of time, climate and man some buildings and machinery remain surprisingly resilient: the boarding house at Laurentian (3); a single-drum hoist at the Elora mine, Gold Rock (4); and cage at the Detola mine, Gold Rock (5).



3



4

destruction. In some cases, boom towns that arose as centres for the industry have continued to grow; older buildings and other structures associated with the golden heyday have disappeared in the process. At some of the old mining sites, structures such as headframes, power houses, even mills, and many pieces of machinery still remain, despite the ravages of time and scavengers.

In 1977, regional geological staff of the Ontario Ministry of Natural Resources became interested in the history of gold mining in the region and in the fate of the old mine and mill sites. During the summer of



5



that year, a survey of the old gold producers was initiated. The survey confirmed what had been expected, that much old equipment and buildings remained in a number of areas. One of these was particularly exciting, exhibiting a variety of structures and machinery. This was Gold Rock, a mining centre established during the late 1890's and early 1900's, located at the northern end of the Upper Manitou Lake, 40 kilometres south of Dryden.

During the summer of 1978, staff of the Ministry of Natural Resources (MNR), the Ontario Ministry of Industry and Tourism (MIT), and the Ontario Ministry of Culture and Recreation (MCR) visited Gold Rock. They decided that the site warranted further study. The resulting project, a combined effort of MNR and MCR, had several objectives:

- (a) to establish a historical context for the Gold Rock mine sites and hence establish some measure of their role in the gold mining industry;
- (b) to evaluate the physical, technological, economic, and social impact of the Gold Rock mine sites on the surrounding region and the gold mining industry;
- (c) to evaluate the remaining features of these sites and assess them in comparison with other gold mining areas of their period; and
- (d) to establish conservation measures applicable to the mine sites in the light of the conclusions of the foregoing objectives.

The team entrusted with carrying out the study comprised two people – a historian of technology and a planner. Their complementary expertise enabled the achievement of the study's objectives, the exposition of which, in this case study, serves to illustrate the process and problems of cultural landscape assessment.<sup>1</sup>

## PART II

### THE CONTEXT FOR CONSERVATION

The effectiveness of any conservation measure depends in part on a variety of factors that may not at first glance appear pertinent to heritage conservation. Indeed in many respects heritage conservation in Ontario has tended to be viewed almost as an antiquarian sideline, divorced from the mainstream of current planning and development activities and concerned usually with the preservation of individual buildings, usually of architectural or biographical value. In considering conservation measures appropriate for the Gold Rock area it was important that the protection of the cultural landscape be evaluated with respect to factors such as prevailing land use policies, the means of conservation such as the Provincial park system, and the role of the Ministry of Natural Resources.

#### 1. Land use planning

The land use planning activities of the Ministry of Natural Resources form the back-drop against which the conservation of mine sites at Gold Rock must be viewed. Any study that attempts to address an environmental issue has to take into account prevailing planning policies irrespective of whether they are general, specific, land-related or socio-economic in nature. Planning policies will have a distinct bearing on how an area will be affected in the future, the pressures that may confront the area and the way with which these pressures will be dealt.

The Ministry of Natural Resources is concerned with land and planning through the provisions of *The Public Lands Act*<sup>2</sup> which charges the Minister of Natural Resources with "the management, sale and disposition of the public lands and forests" (Section 2). Due to the prevalence of public lands within northern Ontario, the Ministry of Natural Resources

Empty buildings invite vandalism no matter where they are situated. A ceramic bowl has been dropped through an amalgamation table at the Laurentian mill (6) and the assay office has been thoroughly ransacked (7).



has therefore assumed the role of a senior planning agency and resource manager. Indeed, the Ministry can survey or subdivide public lands (Section 11); establish zoning plans for defining the purposes for which public lands may be administered (Section 16); and in unorganized territory, restrict the erection of buildings or structures or the undertaking of any land improvement schemes (Section 17). In addition, when the Ministry sells public lands, it may impose conditions in order to restrict the particular use of land. Further to these general concerns, it is also responsible for the control and management of provincial parks (*The Provincial Parks Act*, R.S.O. 1970 as amended), the land for which can be acquired under provisions of *The Public Lands Act*.

The involvement of the Ministry of Natural Resources with land has necessitated its involvement with land use planning, and of course the variety of social, economic and physical factors affecting development. Due to the large areas of land with which it is concerned, as well as the various associated resources, a particular type of planning approach has been adopted. This approach is a hierarchical structure of several levels of planning based on geographical area. At the provincial level, a strategic land use is to be prepared covering four main areas; the Province of Ontario as a whole, the Northwestern Region, the Northeastern Region and the Southern Region. The strategic land use plan identifies broad objectives to be pursued. This provides a general framework to guide and co-ordinate regional land use programs. Local area or district planning is to follow the provincial and regional levels of planning. Implementation of these plans occurs at the resource management level in the hierarchy.

These various types of plans have the potential for affecting heritage features in a variety of ways. Planning policies respond to the social, economic and physical needs or demands of society. These plans



or policies usually promote either change or maintenance of the status quo. In both cases, the impact upon heritage features and cultural landscapes can be either beneficial or detrimental.

The mine sites at Gold Rock provide a case in point. A new north-south connecting route – the Manitou Road – was to be constructed from Fort Frances to Dryden. Its proximity to the mine sites at Gold Rock made them more accessible than they had been before. As a result, the beneficial and detrimental impacts became clear. On the positive side, the potential existed for the area to become a source of interest to tourists as well as providing readily accessible technological evidence of typical gold mining activities in the 1890's. To the detriment of the Gold Rock area, however, the new road made accessible an area that would be ideal for souvenir collectors, treasure hunters, and vandals. Destruction of the site would be the inevitable conclusion. But what if the road had not been built? The benefits of no change would entail a very low level of accessibility and hence added protection. Conversely, the lack of public awareness of such features, and the ravages of time and climate would have resulted in the eventual demise of these particular heritage features and landscape.



Buildings are slowly succumbing to climate and structural fatigue: the shafthouse, Laurentian mine (8); boiler house, Elora (9); and the cookhouse at Laurentian (10).





The land use planning activities of MNR do have a profound impact on the landscape and its features, intentional or otherwise. The Gold Rock area was affected by a variety of Ministry plans and policies. At the local level, an interim zoning plan had been instituted as a result of the construction of the Manitou Road from Fort Frances to Dryden. The Plan was an interim measure to guide development until a district plan and resource management plans had been prepared for the area.

The zoning plan comprises a map, designating areas for particular uses, and written policies as to how such designated areas would be managed and developed. The Gold Rock area was to experience limited development, primarily for resource production and extraction and public recreation. The management policy for the zone in which Gold Rock was situated indicated that no further expansions of public, private or commercial recreational facilities would be permitted until detailed studies had been undertaken of the Manitou Lakes and its watershed. The policy did permit, however, normal resource extraction and mining, together with the required access roads.

This latter policy was in concert with the draft strategic land use plan that was being prepared at that

time for the Northwestern Region. The plan was a broad-brush document showing in general terms how the Northwestern Region was to develop over the coming years. Policies were proposed for various types of land use, resource development and other activities. The draft plan indicated that the Gold Rock area was of high mineral potential. Any development, particularly that which covered the land permanently, would be discouraged in such areas. Clearly there was a desire to keep these potential areas free for future resource extraction. There was no reference, however, either in the strategic or zoning plans to the impact of renewed mining activities on the existing mine sites.

It became evident that any future district plan or lake management plan prepared by MNR would have to give very careful consideration to the complex problems and competing demands that existed in the Upper Manitou district. These included:

- the impact of a new road, particularly aspects of increased accessibility to surrounding land;
- the desire to retain undeveloped areas of high mineral potential;
- the intention to encourage a degree of public recreation commensurate with the desire to protect water quality and fish life; and
- the existence of heritage features, particularly mine structures, whose resource values had not been adequately evaluated in the light of other competing demands in the district.

Resolving these particular issues could only be promoted by a district plan or lake management plan adopting a sensitive and flexible approach to resource protection or conservation. While mineral resources, water quality, and fish life had received a fair degree



11. Our industrial heritage is seldom considered in the planning and development activities of either private or public agencies – apart from the usual fervent desires to demolish, wreck and obliterate.

of attention as factors affecting the future development of this area, the heritage features were an unknown quantity. As indicated earlier, the objectives of the Gold Rock Study included making known the unknown.

## 2. Heritage conservation and provincial parks

In any planning exercise it is desirable to examine several options in seeking particular ends or objectives. Seldom is there just one course of action open to the decision maker. Usually several choices exist with varying costs and benefits. Some options may achieve specified objectives with great cost and few benefits, others may entail little cost and great benefits. Only by examining several options can these benefits and costs be adequately weighed up against each other and one chosen that is both economically and socially preferable. In considering the conservation of mine structures and artifacts at Gold Rock, three courses of action were examined. Each in its own particular fashion was capable of achieving some aspect of conservation. It was these particular aspects that were of interest to explore in order to identify which course of action presented the best conservation opportunities.

The conservation options considered were: utilising provisions pursuant to *The Ontario Heritage Act*; relocating artifacts and structures to a museum environment; or including the mine sites within a Provincial Park. Within the time allotted for the Gold Rock study, detailed cost/benefit analysis was not possible. The general consequences of each alternative, however, could be described.

*The Ontario Heritage Act* has as its purpose: "the conservation, protection and preservation of the heritage of Ontario"<sup>3</sup> and makes various provisions to achieve this purpose, particularly the protection

of buildings and areas of architectural and historical significance and also sites of archaeological significance.

Buildings and areas of historical or architectural importance can be protected by the designation of the properties or areas by the council of the municipality in which they are situated. Such designation may be carried out with the advice of a local Architectural Conservation Advisory Committee.

The Gold Rock Study Area is located in unorganized territory and the provisions of the Act, widely used in southern Ontario, would apply differently in this instance. One popular avenue for conservation was closed; however, other provisions set out in the Act could afford the mine sites a certain degree of protection. Part VI of the Act deals with the conservation of resources of archaeological value and defines property that may be designated. Such property means:

"real property but does not include buildings or structures other than *ruins*, burial mounds, petroglyphs and earthworks"<sup>4</sup>

From this definition and the results of the inventory of buildings and artifacts at Gold Rock, several of the mine sites or parts of them could be considered as archaeological sites due to their physical condition. Certain areas of these mine sites, however, exhibit characteristics that prevented their consideration as ruins and hence as archaeological sites. The mill at one mine site, for instance, while definitely in a derelict state, does possess good foundations and sound structural work. Its status as a ruin could be open to dispute.

However, the Gold Rock study area, as a whole, can generally be described as ruinous and the *area* would



12. In Ontario, awareness of industrial buildings, ruins and other artifacts as important elements of our cultural heritage is contributing to the growth of a new discipline and body of knowledge known as in-

dustrial archaeology. This view shows the ore house and former aerial tramway at Big Master — building or ruin?

be appropriate for designation. Conservation and protection of properties that are designated by the Minister of Culture and Recreation is afforded by Section 56(1) of the Act that ensures that:

“No person shall excavate or alter property designated under this Part or remove any object therefrom unless he applies to the Minister and receives a permit therefore.”

Such a permit is only issued where it is proven to the satisfaction of the Minister that excavations, alterations, or removal of objects would not interfere with the protection of the designated property. Designation of the mine sites, in this instance, would not provide adequate protection because:

- the designated property remains in private ownership, not conducive to public access and hence appreciation;
- there is no onus on the owners of designated properties to maintain or upgrade properties and further deterioration of mine sites would be likely; and
- positive restoration and upkeep is not encouraged.

In the light of these criticisms, designation of Gold Rock under the provisions of *The Ontario Heritage Act* serves no useful purpose with regard either to conservation or to the utilization of the resource for public appreciation.

While the designation alternative (and as we shall see later, the historical park alternative) involves protection of mine sites *in situ*, in certain instances the relocation of historic structures may be feasible. Removing historic structures from their contextual landscape, in which they acquire part of their significance, to other sites has in the past been a way of



conserving such buildings and structures for public appreciation. A museum environment, while offering several benefits, can never adequately represent or recreate this contextual landscape from which the buildings and structures derive value. This deficiency means that the degree of public appreciation is lessened.

Despite this drawback, however, mining museums in various forms do exist, from a simple display of artifacts and photographs, such as Cobalt's Northern Ontario Mining Museum, to exhibits displaying mine buildings with models of mine sites, as at the Miners' Museum, Springhill, Nova Scotia.

One of the choices for conserving Gold Rock's mine buildings and structures was to relocate them at another gold mining and milling site in northern Ontario, perhaps enabling comparison with other forms of gold and mineral mining and affording greater accessibility to a broader experience of mining history. Another choice was to relocate buildings to southern Ontario at museums of science and technology in Toronto or Ottawa, enabling even greater public accessibility but a greatly diminished contextual significance.

The foregoing conservation measures illustrated severe limitations in their capacity to actually protect, *in situ*, the cultural landscape and its component elements. It became clear that the concept of conservation through provincial park designation held the most promise.

The establishment of provincial parks presents another aspect of MNR's involvement with land use and planning. Indeed, the provincial park system seeks to implement a general goal of MNR in providing for outdoor recreation, as well as protecting "significant natural, cultural and recreational environments." These general goals are furthered by four



objectives of the MNR's provincial park system:

- to protect provincially significant elements of the natural and cultural landscape of Ontario (Protection Objective);
- to provide provincial park outdoor recreation opportunities ranging from high intensity day-use to low intensity wilderness experiences (Recreation Objective);
- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Ontario (Heritage Appreciation Objective); and
- to provide Ontario's residents and out-of-province visitors with opportunities to discover and experience the distinctive regions of the Province (Tourism Objective).<sup>5</sup>

13. The cookhouse at Laurentian derives much interest and value from its landscape setting and relationship to the adjacent boarding house and other building sites. Much would be lost in moving this building to a pioneer village or museum environment.

In order to achieve these objectives, six classes of provincial parks have been defined. Each class of park may achieve any combination of these objectives, but may have a particular emphasis on pursuing one objective. The six classes of parks are:

- Wilderness Parks;
- Natural Reserves;
- Historical Parks;
- Natural Environment Parks;
- Waterway Parks; and
- Recreation Parks.

The Historical class of park is concerned with the achievement of two particular objectives. The Protection objective is aimed at establishing a system of provincially significant, special and representative prehistorical and historical resources. The Heritage Appreciation objective is concerned with providing opportunities both for unstructured individual exploration and appreciation of the outdoor cultural heritage of Ontario, and for exploration and appreciation of cultural environments through interpretation and education based upon the character and significance of historical parks.



14. The Laurentian shaft-house which comprises headframe, dry room, mine office, supply room and engine room is capable of giving an observer an insight into the conditions in which miners worked.

Generally, historical parks are intended to be areas selected to represent the distinctive historical resources of the Province at sites where the achievements and events actually occurred in their original outdoor setting with all the evidence of human impact upon the indigenous landscape. These distinctive historical resources are therefore to be afforded protection by historical park designation and to be utilized for interpretative, educational, and research purposes.

In order to represent a wide range of landscape-related historical resources, historical parks are intended to be organized in such a way that they will represent certain themes of the human history of Ontario. Each theme is based upon a common activity or procedure that involved a substantial portion of the contemporary population within a defined time span and geographical area. Based on further refinement of these themes, in terms of groups of people, time, and location, certain specific subthemes or theme segments can be identified. A description of these various themes is found in *A topical organization of Ontario history*,<sup>6</sup> a compilation of the history of Ontario as it might be expressed in a historical parks context.

The mine sites at Gold Rock would be the principal resources for a Theme Segment entitled Northwest-ern Ontario Boundary Waters Gold, which is within the Mining and Mining Communities Theme. The target in establishing historical parks is the representation of each theme segment of the Province's human history. Thus the establishment of a historical park at Gold Rock would contribute to the achievement of this target.

In organizing historical parks, MNR prepares a Master Plan for each park that will set out specific zones enabling the land to be allocated to its most appropriate use. It is the Historical Zone that provides for

the protection, preservation, and presentation of historical features in their associated landscape and consequently is the major focus of a historical park.

Historical features may also be included in other classes of the provincial park system, particularly Natural Environment, Waterway, and Wilderness Parks. The Historical Zone in these classes of parks, while affording the same degree of protection and conservation, will not be the major focus of such parks and will tend to be a secondary resource. It is evident that the provincial park system of the MNR has great potential for conserving cultural landscapes, as well as providing a means to implement various aspects of its land use planning activities. (Only one historical park has been established by MNR. Petroglyphs Park, formerly a Natural Environmental Park, was re-designated as the first historical park in 1977.)

The mine sites at Gold Rock are well suited for inclusion into a historical park. The area possesses mining structures and artifacts with an indigenous landscape that imbues the area with unique value and great opportunities for encouraging public appreciation.

The biggest drawback to the consideration of the historical park as a viable conservation measure was that the mine sites at Gold Rock were in private ownership. A basic precept of the provincial park system is that land is held in public ownership. The questions of land acquisition was beyond the scope of the Gold Rock study, but obviously the unknown mineral potential of Gold Rock and the possibility of renewed mining were important factors that would have to be borne in mind for the future. Nevertheless of the three types of conservation measures examined during the course of the Gold Rock study, the historical parks alternative appeared the most advantageous in terms of conserving the mine sites

and promoting public access and appreciation. The advantages of this choice are:

- positive conservation action with the protection, maintenance, and restoration of the mine sites *in situ* being enabled under public ownership. This cannot be achieved under *The Ontario Heritage Act, 1974* or adherence to a museum relocation-presentation policy;
- ease of public access to the mine sites, not afforded by designation of the properties under *The Ontario Heritage Act, 1974*; and
- the conservation of mine sites as a heritage resource in the indigenous landscape from which they derive a great part of their significance. This cannot be achieved in relocating buildings and structures at other museum sites.

### PART III

#### DESCRIPTION, ASSESSMENT AND CONSERVATION OF THE CULTURAL LANDSCAPE AT GOLD ROCK

##### 1. Gold Rock: establishing the historical context

Wood, iron, stone and steel by themselves do not describe their history or value. Old buildings and rusted machinery of a past industrial complex often stand as impressive yet mute monuments to man's activities and achievements in the environment — his labour, technology and economic desires.

In order to understand the vestiges of an industrial landscape, and to derive some measure of its value in relation to other past industrial landscapes, it is necessary to establish its historical context. This is useful and important for several reasons. Not only



does the context add to society's knowledge of itself and hence enriches its cultural identity and personality but also, within the conservation planning process, aids in making decisions where financial resources may be scarce and valued cultural landscapes numerous. Additionally, examining the historical context helps explain the importance of the site within local, regional and provincial development as well as its position within the technological evolution of the gold mining industry: perhaps Gold Rock was a technological anomaly, an example of a minor industry within northwestern Ontario; perhaps gold mining in the region bore no relationship to the subsequent growth of mining in the Province. If these were true, why should Gold Rock, despite the quality of its heritage resources, be considered worthy of protection? The historical context provides many of the answers to these questions and establishes the basis for informed decisions.

15. These two boilers still have their stone housing but the covering timber superstructure has collapsed. Installed at the Detola mine in 1908, the boilers were manufactured by E. Leonard and Sons of London, Ontario and supplied power for the hoist and compressor.



Before outlining the actual research process, its context requires comment. Among historians of Ontario, there has not been great interest in either the province's industrial history or that of the regions lying outside the heavily settled belt in the south. Although the earliest antecedents of industry, such as home crafts, lumber milling, the grinding of grains, or the work of the blacksmith have been of some interest to historians, there has been little work undertaken on the economic, social, or technical growth of primary resource production: the key industries in the development of northern Ontario.

Because of this central focus, historians writing of Ontario have produced very few works on either the development of northwestern Ontario or the gold mining industry. With the exception of some local histories, the development of the northwest is portrayed almost solely as the unfolding of transportation routes through it; regional industry and settlement frequently are ignored. Without such background material, no short cuts existed for research into the historical context of Gold Rock.

Under these circumstances, the study team turned immediately to primary documentary materials. The best sources in research are the routinely generated government records. The publications of the Ontario Department of Mines were invaluable. They provided background information on the growth of gold mining in the province; the development of the regional gold industry; and, in particular, the mines at Gold Rock. Through analysis of annual production statistics, descriptions of exploration and development, and general observations by the mine inspectors of the day on the state of the industry, it was possible to describe and characterize mining at Gold Rock, in the region, and across the province constructing a general overview of the industry and within it the position of Gold Rock. In addition, many of the annual and summary reports produced by the Depart-

ment of Mines contained both photographs of the mines at Gold Rock and site maps.

After this initial foray into the government records, it was possible to state that gold mining in the northwest was the first sustained case of such activity in the province; that it has two phases: an early phase from 1886 to 1896 and a second phase from 1902 onward; and that the industry was the first importation of contemporary western American mining and milling technology into the province.

Gold Rock emerged within the second phase of regional gold operations and as such, the mines represented all of its salient features. Economically, mining at Gold Rock illustrated the speculative and short-lived character of regional activity. On the social side the mines employed on a seasonal basis the usual small workforce composed predominantly of single men living in bunkhouses on the mine site. This in itself was an inhibiting factor to town development. The technology employed at the mines and mills represented the technical level of the region during the second phase. Mining was carried out through a mixture of hand and machine drilling underground, with hand haulage of ore. Milling utilized the characteristic set of stamps for crushing and amalgamation for recovery. All machinery was powered by steam or compressed air.

From these initial results several conclusions could be drawn. On a regional level the gold industry at Gold Rock was representative of the area. By no means did it include the most important producers of the region or those with the longest life, but nevertheless it embodied the general character of regional operations and herein lay its value, its representativeness. (An important sidelight to this phase of the research was the acquisition of a list of comparable operations throughout the province, but a comparison of these sites with those of Gold Rock had to wait until the completion of the field work.)

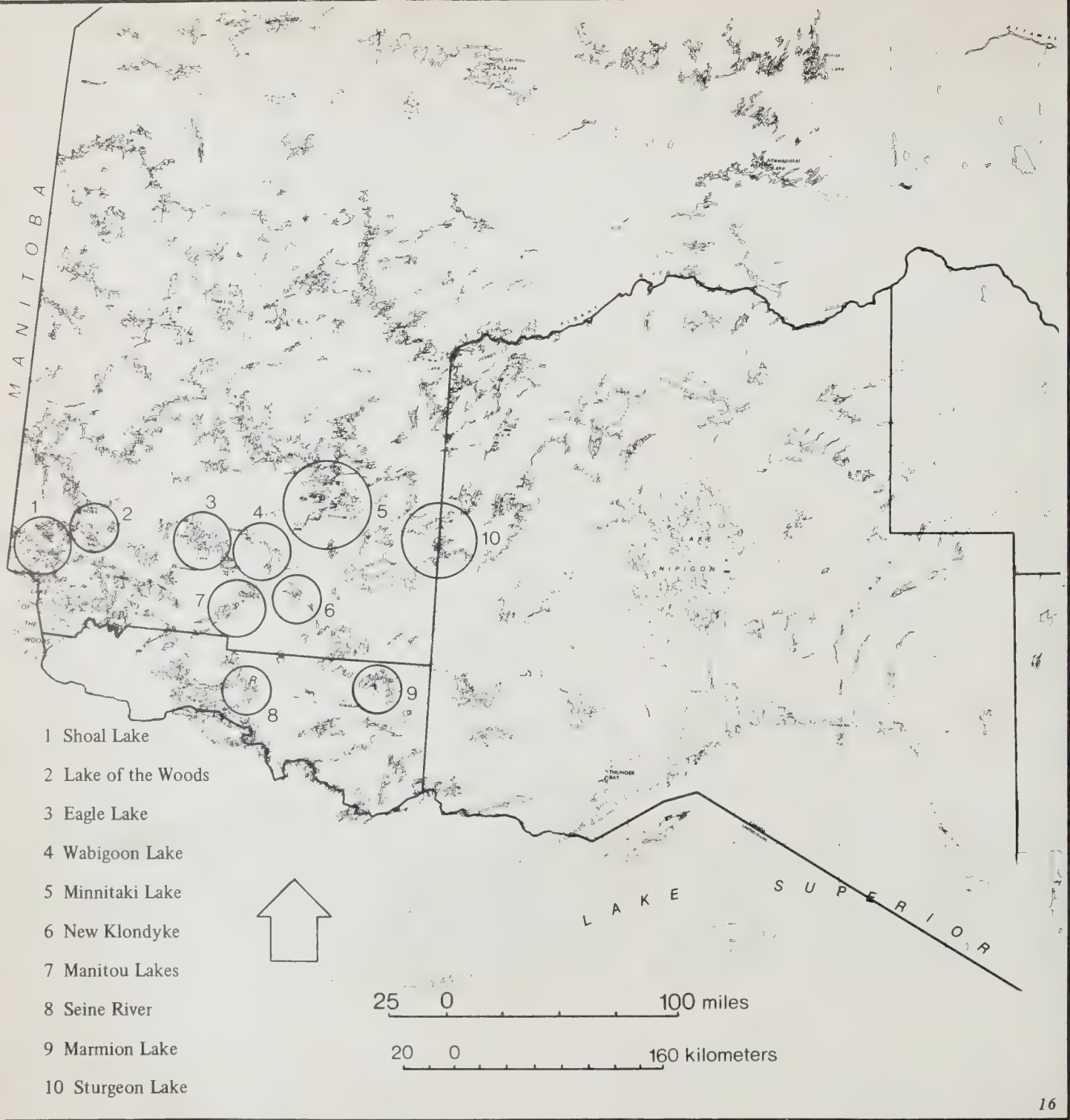
A number of important aspects still remained to be addressed, particularly the relationship of the regional gold industry to the economic growth and settlement of the northwest, and the local impact of the mines at Gold Rock.

The next phase of research addressing these specific problems required more time than the review of government documents had taken. For one thing, information was less accessible to the researchers and the sources less productive.

A number of different sources were consulted including local newspapers of the time, claim files, colonization road papers, and articles in such diverse publications as the *Journal of the Association of Ontario Land Surveyors* and reports of the Ontario Department of Agriculture. In addition, files held by Noranda Exploration Limited and the records of the Mining Inspector of the Department of Labour, both in Thunder Bay, yielded some useful information.

From this scattered collection, the details of the local economy during the period of active mining were fleshed out so as to distinguish those changes that had occurred on the sites during the revival of mining in the 1930's, and to understand the position of gold mining within the region. Several conclusions were drawn, namely, that the mines had an impact on the local economy, leading to the rapid growth of Wabigoon as a local mining centre, and on the development of road and water transportation in the area.

The relationship of gold mining to regional growth became clear: mining was financially predicated on logging. Not only was the land opened, explored, and its resources assessed, but much of the funding for prospecting and initial mine development came from logging entrepreneurs. In addition, mining was also a secondary industry to logging. Nevertheless,





mining operations by their fixed nature contributed to settlement and exploration in a way that logging did not. For more than twenty years, mining was a key component of the development of the region bringing about 4,000 people into the region and reinforcing the growth of primary industry as the mainstay of development.

The technological status of the gold mines was established through an examination of American treatises on gold mining, textbooks of the period, and journal and magazine literature. The mines at Gold Rock were well within the mainstream of the evolution of production during the period, almost to the point where some of the machinery known to exist on the site began to be considered as text-book cases. An additional benefit of this search was the collection of technical diagrams of the machinery known to be at Gold Rock and of standard plant layouts. This material proved useful for on-site recognition of artifacts.

With the clarification of many of the foregoing issues the growth, development and eventual abandonment of Gold Rock could be pieced together and the historical context firmly established. The Manitou Lakes Gold District was dotted with many small prospecting mines. Earliest exploration of the district was not recorded although prospectors were probably active during the 1870's as construction of the CPR line north of the lakes proceeded. By 1894, only 14 claims were leased or patented in the entire district. Most of these were held by independent prospectors. The rush to the district began the next year as interest in the northwestern gold increased. In 1896, these initial forays became a flood. Funds for exploration were made increasingly available by local entrepreneurs as they sought to claim the most promising land.

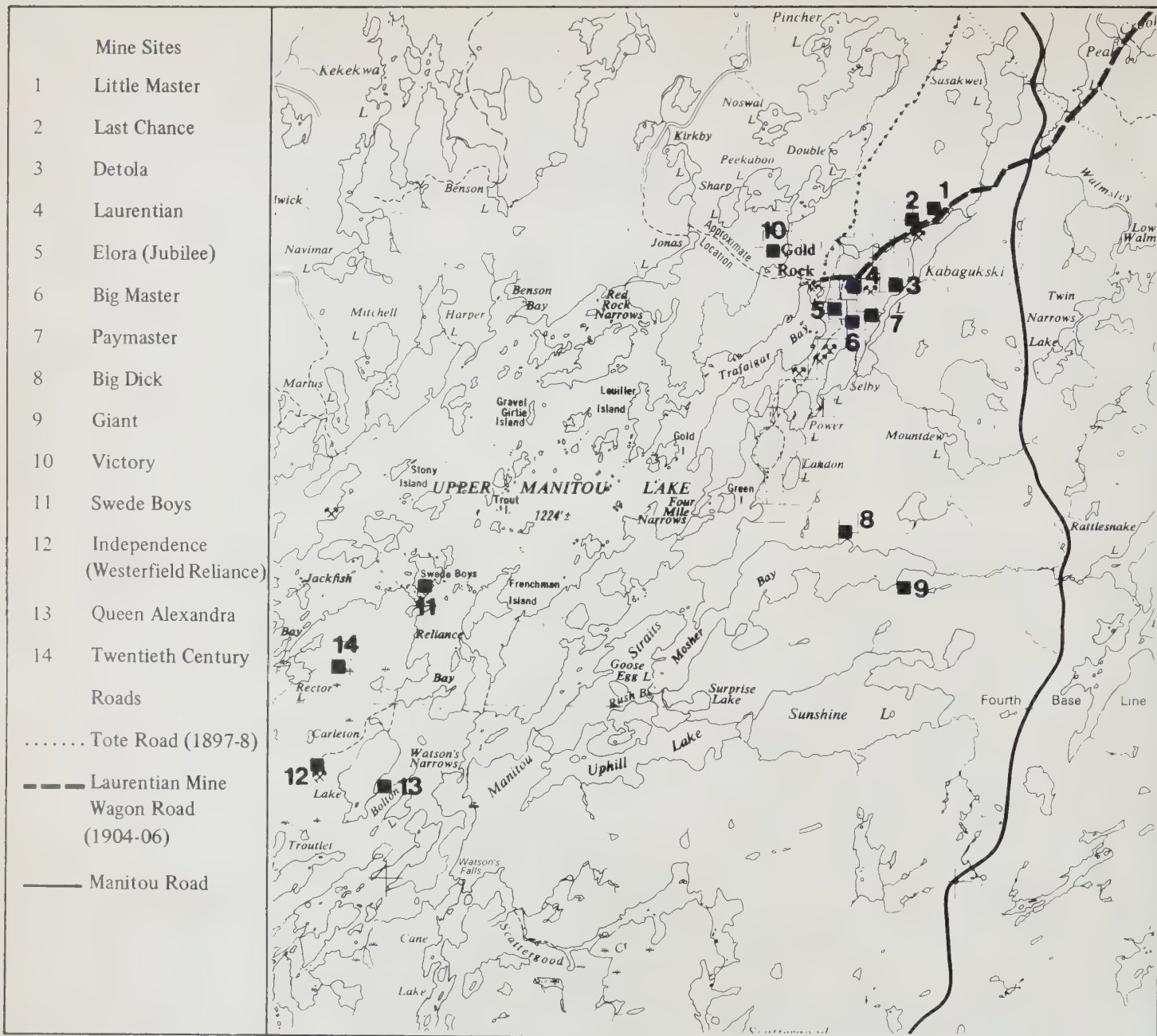
Independent prospectors were rapidly superseded by the larger syndicates. Exploration inland, away from

the easily accessible and already explored shoreline, led to the discovery of high grade pockets of ore. The potential of the Upper Manitou was seized upon. People were attracted to the nearest rail stop in the area, Wabigoon. Very quickly the population of Wabigoon rose as the CPR, who controlled both the land and development opportunities, began a massive publicity campaign throughout the prairies and eastern Ontario.

Despite this great surge of interest in the area, there were several drawbacks. Transport to the lakes was limited and mine owners were stymied in their efforts to develop their properties. More seriously, the expected boom did not arrive. Beginning in 1897 and escalating during the following year, capital moved out of the region as reports of the rich Yukon strikes filtered back to the east. Development of the area came to a halt and the future turned bleak.

It was during this period that Gold Rock, situated at the end of the logging road from Lake Minnehaha, was settled. In 1897, it was no more than a small village of tents with a log house or two. But Gold Rock's central location amongst the mine sites in this area as well as its links to Wabigoon by steamships and government road would see this village of tents grow into a thriving local supply centre.

The turning point in the fortunes of the Manitou district came in 1900 when the Big Master mine was re-opened by a Buffalo syndicate from New York state. Shafts were sunk and by December of that year the surface plant had arrived and work began on building the mill. By 1902, the mine site was the centrepiece of the district. Beset by overwhelming problems in 1903 — lack of fuel, lack of capital, and lack of ore — the Big Master mine closed in 1904. This would have had serious repercussions had not an extremely high grade pocket of ore been discovered near Trafalgar Bay. This new site became the Laurentian Mine and from 1905 to 1906 the future



17. Original mine sites on Upper Manitou Lake.



of the Manitou district rested with this new operation. In 1906, the first gold brick was poured at the Laurentian. Over the next three years, the company continued to produce. Its success resulted in the opening or re-opening of a number of other mines in the Manitou, the Detola and the Paymaster mines being the most important.

Throughout 1907 and 1908, the operations of the Laurentian continued. Nevertheless, other mines in the district, as well as those of the larger region, were beginning to experience difficulties.

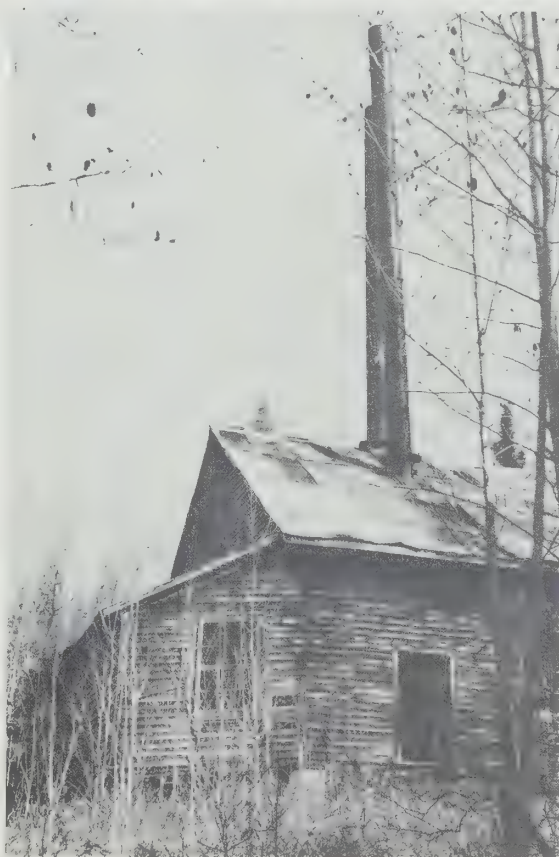
In 1904, silver was discovered in northern Ontario at Cobalt and prospectors and miners began to leave the northwest. More importantly, investors were becoming disillusioned with the region. Mines like the Big Master had folded with considerable loss of capital, making investors wary. Other capitalists were becoming interested in base metals, and within the region prospecting for iron and copper was more active than the search for gold.

For the mines of the Manitou capital was increasingly hard to come by and most operations were reaching the point of no return. Suddenly, in 1909, the Laurentian mine closed. The high-grade ore was gone and the working capital had run out. The owners had milked both the treasury and the mine; there was nothing left. The closure of the mine was the death knell of the Manitou district. In December 1909, the Paymaster and many other properties closed. The sole survivor, the Detola, continued its development programme until 1911, when it too shut down. It was not until the 1930's that the Manitou district again attracted attention. During 1935, as the cost of labour fell and capital accumulated, numerous small speculative companies began extensive exploration of the old properties of the Manitou. The Big Master, Detola, and Elora (formerly Jubilee) mines were all re-opened. The Laurentian



18

18. A timber base and stone foundation are all that remain of the Big Master erected in 1901.



19. The power house at Laurentian – a timber frame, clapboard building, constructed in 1905 – conjures up a stirring image amidst the trees.

19





20. Last used in 1911, the Detola headframe is now a fragile structure.

mill was overhauled and used for sampling. Except for the Big Master, all these ventures failed. Between the fall of 1938 and early 1939, all the older buildings, except a stone magazine, at the Big Master were torn down. New surface plant was installed and shaft sinking continued. Despite early success, production fell as the relatively higher grades of ore were removed. In 1948, operations finally ceased. Gold mining in the Manitou district truly had ended.

Establishing the historical context of Gold Rock enabled several conclusions to be drawn about the role of its mine sites. They were representative of comparable developments within the region and also were indicative of the general technological level achieved by the industry at the time. The mines had an economic and physical impact on growth and development of the area and although gold mining was not the mainstay of growth in the northwestern region, it was an important component. Gold Rock was clearly not on the same scale as later mining operations such as Porcupine, Kirkland Lake or Red Lake. Nevertheless, the mines at Gold Rock together with other mines of the region were the first application in Canada of American gold mining technology and as such resulted in the training of a number of prospectors, miners and engineers who later went on to build the Porcupine. The failure of the area reflected a particular phenomenon of Canadian and American mining speculation that had dissipated by 1910.

An example of historical research, the Gold Rock typifies problems encountered in northern Ontario — simply establishing the historical context! The study clearly illustrated the need to resort to all manner of primary materials including government documents, company records, contemporary newspapers, local histories and historical collections, photographic archives and technical articles.



21. The gold mining and milling landscape of the 1940's stands as a distinct contrast to its predecessors of the first decade of the twentieth century: the refinery (foreground), mill and ore house (background) at Big Master.





a. The Detola Mill



### Gold Milling

The milling of gold was an extremely simple process to describe, although much less so to perform. Essentially, milling involved the mechanical reduction of ore to a sufficient fineness that the particles of free-gold disassociated from the waste rock (a process analogous to the natural erosion of quartz veins leading to the formation of placer deposits). Once this fineness was reached, and it varied with different ore conditions, the particles of gold were chemically or mechanically collected and the waste allowed to escape.

From the crushing room the ore, after it had passed through the crusher, moved down into the crushed ore bin above the stamps. After running through stamps in which the ore was broken even further to the consistency of very fine sand, the pulp (in the stamp the ore was mixed with water) passed over the amalgamation tables and then through a classifier. From this machine the pulp flowed to the concentrating floor where the remaining values were separated from the waste rock.

Associated with these various work spaces, although not necessarily in any particular location, were a number of other important components of the mill. A large water tank was normally situated above the stamps. Scattered throughout the nooks and crannies of the mill were the mill manager's office, a storage room for parts and supplies, and normally off to one side, an engine room housing a large steam engine. Running through the mill from the engine room to the various milling machines, along the beams and through the floors, was a complex network of drive belts and wheels providing power for the many operations.



b. The receiving room in the roof of the Detola Mill

*Mill Design:* Most mills in the region were constructed on hillsides where gravity facilitated the flow of materials. The highest room in the mill, and the first in the chain of production, was the receiving room. Here, skips ran to the mill from the shafthouse on an aerial tramway and dumped the mine ore into small bins. Below this room and connected to the bins by an ore chute was the crushing room, housing the preliminary rock breaker.



c. Ore bin (upper left),  
ore feeder (lower left)  
and rear of stamps  
(centre) – Detola Mill

*Crushing:* Stamps were considered a machine for fine crushing, not for reducing large pieces of mine ore. It was felt that to use stamps for the latter purpose diminished their effectiveness. To break ore, a jaw crusher was used. This machine marked the initial point of uninterrupted mechanical or non-human handling of ore that ended at the concentration room.

To reach the jaw crusher from the receiving room the ore flowed down a chute and over a grizzly, a set of iron bars spaced about three inches apart. As the ore moved along the bars the undersized pieces or those of a diameter less than that of the product from the crusher, fell through the spaces and were transferred immediately to the crushed ore bin.

The oversize came to rest on the floor of the crusher room which was covered in

sheet iron. Here the crusher operator hand-sorted the ore, discarding any waste rock, and broke up any large pieces of ore which might not fit in the jaws of the crusher. This work done, he shovelled in the ore. As the machine worked, one plate moved back and forth against a fixed one. The large pieces of ore were pounded successively smaller and smaller until at the bottom of the "jaw" they had reached the size of walnuts. They fell through the bottom and into the crushed ore bin or some device such as a conveyor for moving it there.

The flow of ore from this bin to the stamp battery was controlled by an automatic ore feeder, situated below the bin and behind the stamps. The feeder in turn was activated and run by the action of the stamps through a lever connecting the machine to a single stem. As the stamp rose



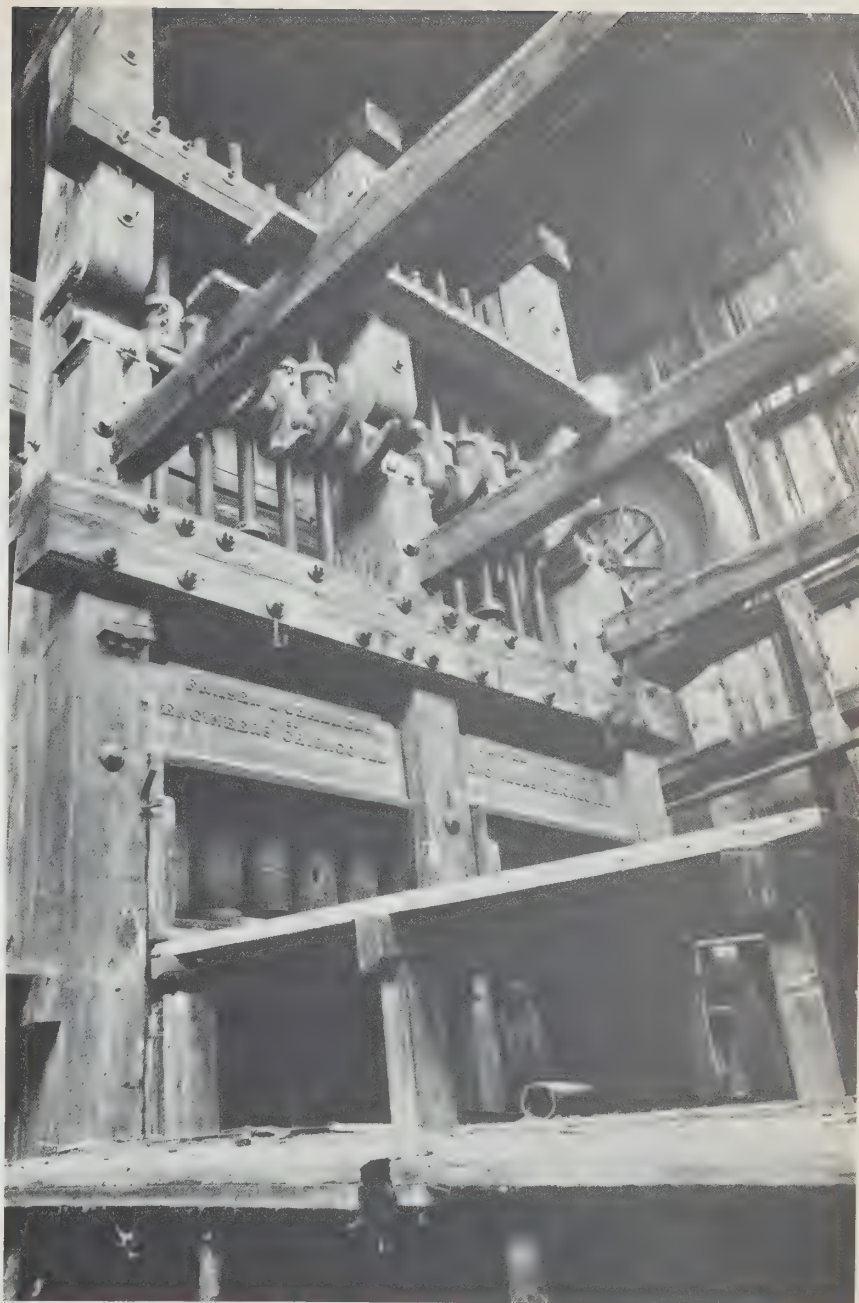
the feeder was opened; when it fell, the feeder closed.

The stamps were the most impressive and complex machine in the mill. By their imposing bulk and through the noise of operation, they overshadowed all other components of the milling process. However, they were nothing more than a sophisticated, mechanical version of the traditional mortar and pestle used by pharmacists for thousands of years.

A large wooden flywheel to the side of the heavy wooden cribbing of the frame turned a long iron cam shaft. As the cams revolved, they lifted the stamp. At a certain point the cam released the tappet and the stamp crashed down. Fixed to the base of the stem was a shoe of chilled cast iron which fell onto a shoe or circular piece of iron sitting on the floor of the boxlike mortar.

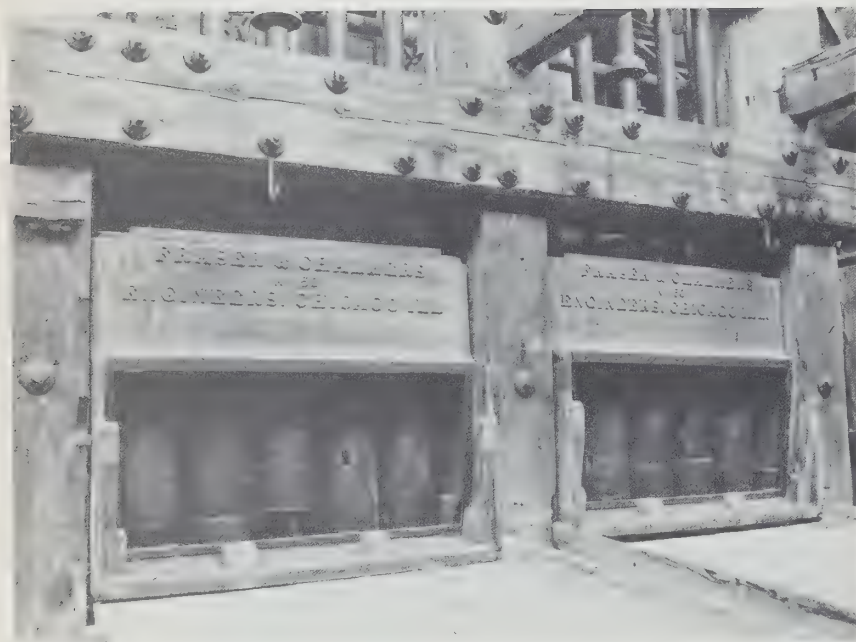
Each stamp dropped over 90 times a minute. The tremendous force of the blow easily crushed any rock lying on the die. The noise was thunderous.

It was important that the ore not be "overcrushed", producing slimes. These extremely fine particles were almost impossible to process. Likewise, operators were concerned not to undercrush the ore or the gold would not be liberated from the waste rock. To stop oversized particles, perforated metal or cloth screens were placed at the mouth of the mortar. Sliming was controlled by the introduction of water into the mortar. The motion of the stamps mixed water and ore, forming a pulp. Heavier material tended to sink; as the pulp churned, it was eventually ground up. Finer particles rose to the lip of the mortar and passed through the screen, dripping down onto the amalgamation plate.



d. Flywheel, cams, stamp frame — Detola Mill





e. Stamp shoes and amalgamation table – Detola Mill

*Amalgamation:* By far the largest percentage of gold recovered in the stamp mills was by the amalgamation of gold with mercury. Both metals combined or alloyed quickly and easily at the slightest contact to form amalgam. The only conditions under which this did not happen were if the gold was oxidized (an unlikely event after the pounding of the stamps), or the mercury polluted with grease or oil, or if the gold was associated with sulphide minerals (refractory ore). Other advantages gained by the use of mercury were that it did not bond with any other materials found in the ores of the region and that it could easily be separated from the gold after milling for re-use.

Running at a slight slope away from the mortars were the amalgamation tables where most of the gold was caught. These tables were long copper plates thinly coated with a layer of mercury and supported by a heavy wood frame. As the pulp from the stamps spilled over the lip of the mortar and began to flow down the plate, it formed a thin film over the mercury. Any gold particles

that came in contact with the mercury were immediately bonded and held in place while the waste material or the tailings continued on and eventually reached a trough leading away from the tables.

Of lesser importance to the recovery of gold, although perceived as enhancing the results, was the addition of small amounts of mercury directly into the mortar. As the stamps churned the pulp the mercury mixed with the water and pulverized rock, combining with any particles of gold held in the solution. Depending on the force of the stamps and thus the degree of turbulence, this amalgam sank to the bottom of the mortar or passed out onto the amalgamation plates.

To capture amalgam from the mortars or any that was knocked loose from the amalgamation plate, slight depressions were built into the trough at the base of the table, or into concentration devices. As the heavier amalgam moved with the flow of pulp it settled in these traps. Sometimes a small amount of mercury was added to the traps to catch gold particles as well as amalgam.

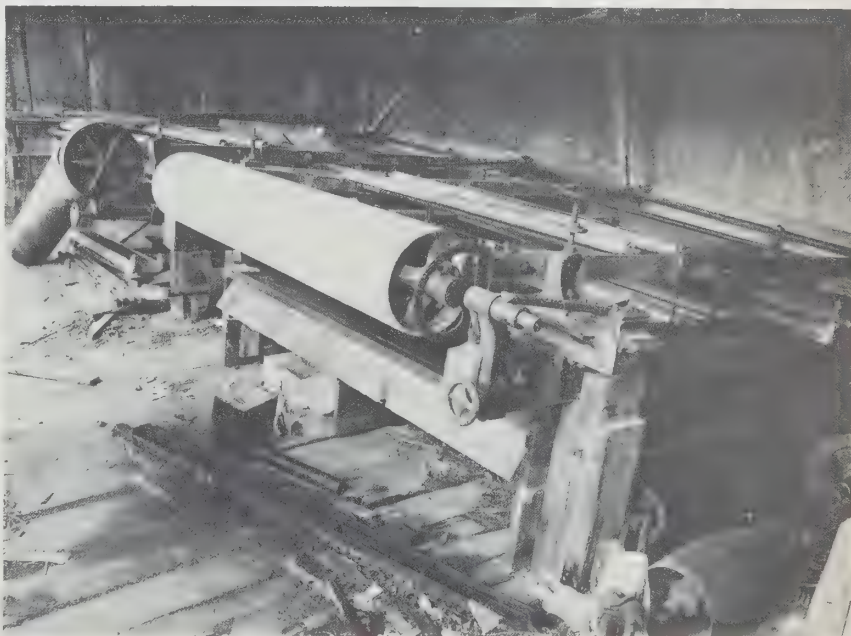
*Concentration:* Despite the efforts of operators a portion of gold was never recovered through amalgamation. Very fine particles were swept through the system without coming in contact with mercury and some gold remained associated with sulphide minerals. To maximize recovery the tailings from the amalgamation plates were further treated on Frue vanners and the less common Wilfley tables. Because these machines worked best with a narrow range of particles of a similar weight, the tailings were run through a classifier prior to concentration.

From the tables the pulp passed through a series of inverted cone shaped bowls, called classifiers, normally of the Brown design. As the force of the movement diminished, the heaviest particles settled in the first bowl and so on until all the particles were divided by weight. There was one bowl per concentrating table. Beneath the bowl at the apex of the cone, was

a spigot which controlled the flow of pulp to an open trough leading to the concentrating tables.

The most frequently used separating table was the Frue vanner. This machine had a long, slowly revolving endless belt of various surface characteristics and motions. As the pulp poured onto the belt, its shaking motion settled the particles according to weight. At one end the heaviest particles, those containing gold, formed a band, while those of lesser weights found their place lower down. As the band of gold-bearing particles accumulated the operator, passing from one machine to the next, scraped off the valuable minerals, leaving the waste to fall off the other end.

The Wilfley table ran on similar principles. A series of baffles slowed the flow of pulp across the surface of the table and provided settling barriers for the heavier particles. Again, an operator was required to clean up the table.



f. Classifiers: inverted cone-shaped bowls — Detola Mill

g. Frue vanners — Detola Mill

h. Pot retort – Laurentian Mill



*Clean-Up:* Stamp mills were not designed to enable constant collection of amalgam. About once every two to four weeks, depending on the grade of the ore, the stamps were stopped for a brief period to allow workers to gather the amalgam. With small scrapers and spoons the mortars and plates were cleaned and the traps emptied of their catch.

At some operations the concentrates with a high percentage of free gold,

or pieces of used equipment such as screens which were impregnated with gold, were thrown into an amalgamation or clean-up barrel. This further processing increased the recovery of gold and ensured that no losses occurred with the discarded equipment.

The amalgam was dumped into a cloth bag held in a wooden pail. To separate the gold from the mercury the bag was first wrung or compressed to push out any free mercury.

The amalgam was treated in either a pot retort or a small muffle furnace. As heat was applied the mercury vaporized and poured out of the pot or the furnace to be condensed for re-use. The operators were left with a spongy mass of gold and minor impurities, which was melted down in a refining furnace and some of these impurities removed as slag. The liquid gold was poured into bar molds. Once they were cool the owners rushed them to the nearest bank.



## 2. The field survey and comparative site assessment

Documentary research is capable of indicating the historical role and value of a site — its quality within the historical context; it can only hint at the site's physical potential to actually illustrate a facet of that history. Only a detailed examination of the Gold Rock mine sites, noting the survival and condition of buildings, artifacts, and the landscape will do this. Thus the phase succeeding documentary research is a field survey in which comparisons are made between what is currently at the site and what is known or suspected to have been there. Following this field survey, the relative heritage value of the site is capable of being derived when compared with similar sites in the province. Only then can the identification of conservation strategies begin.

Approaching this phase of the work, two problems had to be considered. What were the objectives of the field work? And how could they best be achieved within the limited time period available, in this case approximately four and a half days? After consultation with staff of MNR, it was agreed that an intensive study of Gold Rock was unnecessary. Highly detailed information about the total environment was simply not required, although it would be needed for carrying out any physical conservation work later on. A superficial examination of the site's main features, such as simply noting the manner of buildings or machines, was recognized as inadequate. It was decided instead to inventory the site, noting the condition of all features of the landscape without making detailed assessments of structural condition or integrity, and to produce sketch maps of all sites. On the basis of this information, a practical evaluation of the potential of Gold Rock could be made, allowing for comparison with similar sites. This would provide a sound data base for deriving strategies and making recommendations to MNR.

Through earlier documentary research, a basic description of Gold Rock's construction and subsequent development had been formed. From the Department of Mines' reports and monographs it was known what sort of machinery had been installed at the four mines during the late 1890's; diagrams, photographs and maps from the same source indicated the location and function of buildings as well as the paths and roads in the area. Later government reports and unpublished file material provided updated information on the site, indicating changes that had been made after abandonment in the 1910's and particularly those changes that had resulted from the brief revival of mining in the 1930's. Contemporary topographic maps and aerial photographs of the Gold Rock area helped in completing the picture of the landscape in which the survey was to be carried out.

Having assembled this background material, the next consideration was how best to document the site. Since an inventory of features was to be the objective of the field survey, both visual and written records were required. Photographic equipment comprising four cameras, black and white film, colour transparency film, tripod and flash units, was utilized to gather visual information. Written observations, it was decided, would be recorded in notebooks rather than prescribed survey forms. Writing and drawing would be made easier and notebooks would be easy to handle on site.

Field surveying started in earnest on 19 October 1978. The survey was conducted in two phases, the first involving a preliminary "walk-around" of the area, the second being detailed examination and recording of each site. Through the former, the survey team became familiar with the terrain of Gold Rock and the location of the four main mine sites: Elora, Detola, Laurentian, and Big Master. In addition, cursory visual impressions of the condition and

At Laurentian, interior photographs set the context for recording machinery, tools, and other artifacts: core trays (22); workbench and storage shelves (23); and forge (24).

22



23



24



content of each site led to the identification of the more important buildings and machinery. This allowed a basic timetable to be established for carrying out more detailed, organized survey work in the second phase. One day per site was allotted as an adequate length of time to enable description of each site, a sketch map was drawn indicating the location of buildings, structures, and other features, such as tailings. Next, photographs were taken to provide general information about the context of the complex. Each building and structure was then examined in turn. Sketch plans were drawn once again and, wherever possible, photographs were taken from the exterior of each corner and from each corner of the interior. A visual record of the design, construction techniques, and condition of each building resulted. Interior photographs were particularly useful in documenting each floor or work area in the building and providing, in turn, a context for the photographic recording of machinery, tools and work surfaces and areas. Following completion of work on individual buildings, structures and machinery, other features such as waste rock piles, tailings and clearings were also documented. While these were not part of the built environment, they were very much an integral part of the mining landscape, a manifest part of the mines' history.

Although most surveyed features had been known to exist either from maps or aerial photographs, explorations around the mine sites and particularly through clearings revealed additional artifacts that perhaps had been thrown aside during operations. At other times, early features of mining exploration were discovered, such as test pits, trenches and shafts.

The detailed photographic record that resulted provided a comprehensive visual survey of Gold Rock. Together with written descriptions of building condition and function, as well as descriptions of the function, condition and manufacturer of machinery





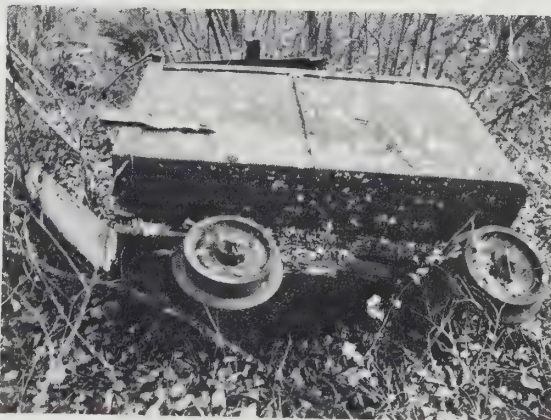
25



27



26



28

Strewn around the mine sites, many bits and pieces of mining machinery and equipment are now lichen-covered and under a tangle of grass and fallen leaves: a cam (25); stamp stem (26); cast-iron die (27); and ore car (28).





29. Missing artifacts and derelict structures may often leave a confusing jigsaw puzzle to be pieced together.

and other artifacts, an extensive inventory and assessment of the Gold Rock landscape had been compiled. Clearly, the Gold Rock landscape of today — silent buildings set against a sylvan background — was far removed from the denuded rock and mud landscape which had been characteristic at the turn of the twentieth century. The mills that once reverberated to the roar of stamps crushing ore were now very silent.

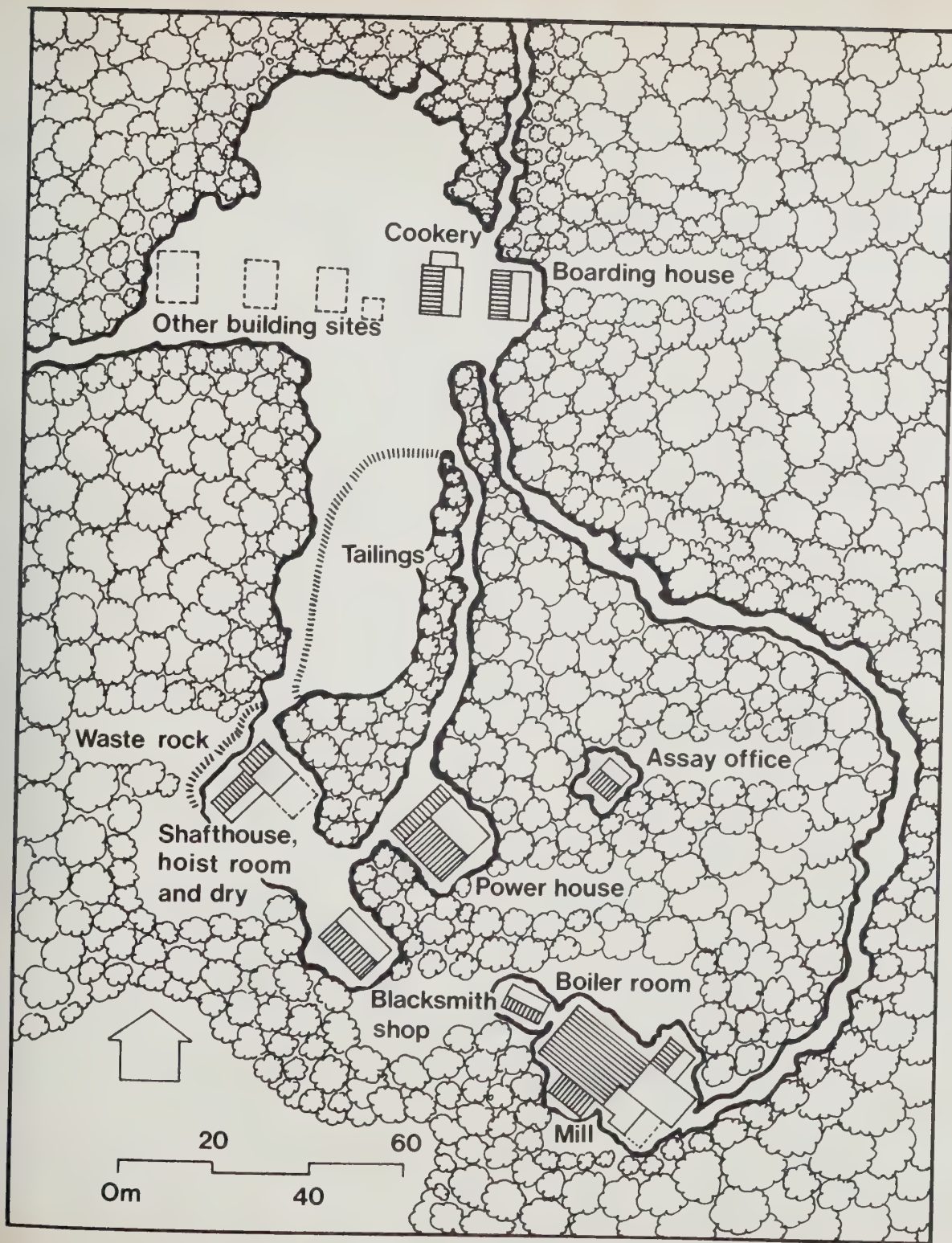
Each mine site, however, exhibited an exciting array of buildings and machinery in a variety of landscapes. The Laurentian mine site was characterized by a number of mine buildings and structures in various states of disrepair. The boarding house for mine workers and the cookhouse were both in existence, but their roofs were sagging with several holes readily apparent. To the south, across the waste of tailings, lay the hub of this site: the mill looming up amongst

the trees and dominating the landscape, the shaft-house leaning at a drunken angle with most of one side missing, and the smaller but no less essential buildings — the blacksmith shop, power house, and assay office, all in a reasonable state of repair.

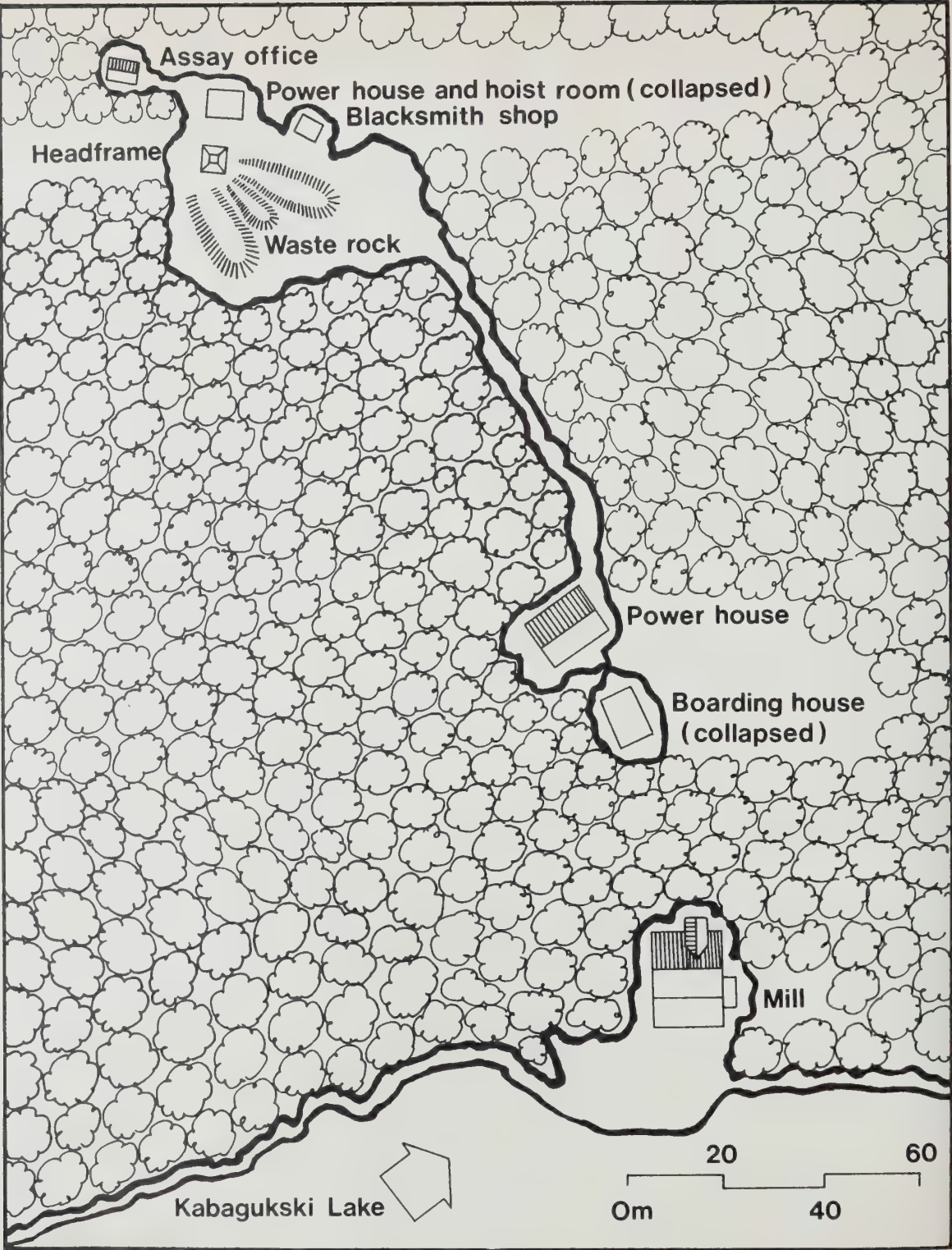
The Detola mine overlooking Kabagukski Lake — while possessing a mill and power house in surprisingly good condition as well as a spectacular set of ten stamps manufactured by Fraser and Chalmers of Chicago, Illinois, in 1898 — lacked the variety of buildings exhibited at the Laurentian. The disappearance of several structures that existed here left an incomplete physical context in which the present buildings could not be meaningfully placed both functionally and visually.

The Elora mine site was derelict. Several buildings had either collapsed or disappeared. Machinery and equipment such as mine cars, a single-drum hoist, drills and drill steels lay scattered around the site. There were, however, examples of past exploration and development techniques not apparent at the other mine sites. These comprised trenches, test pits and an old shaft.

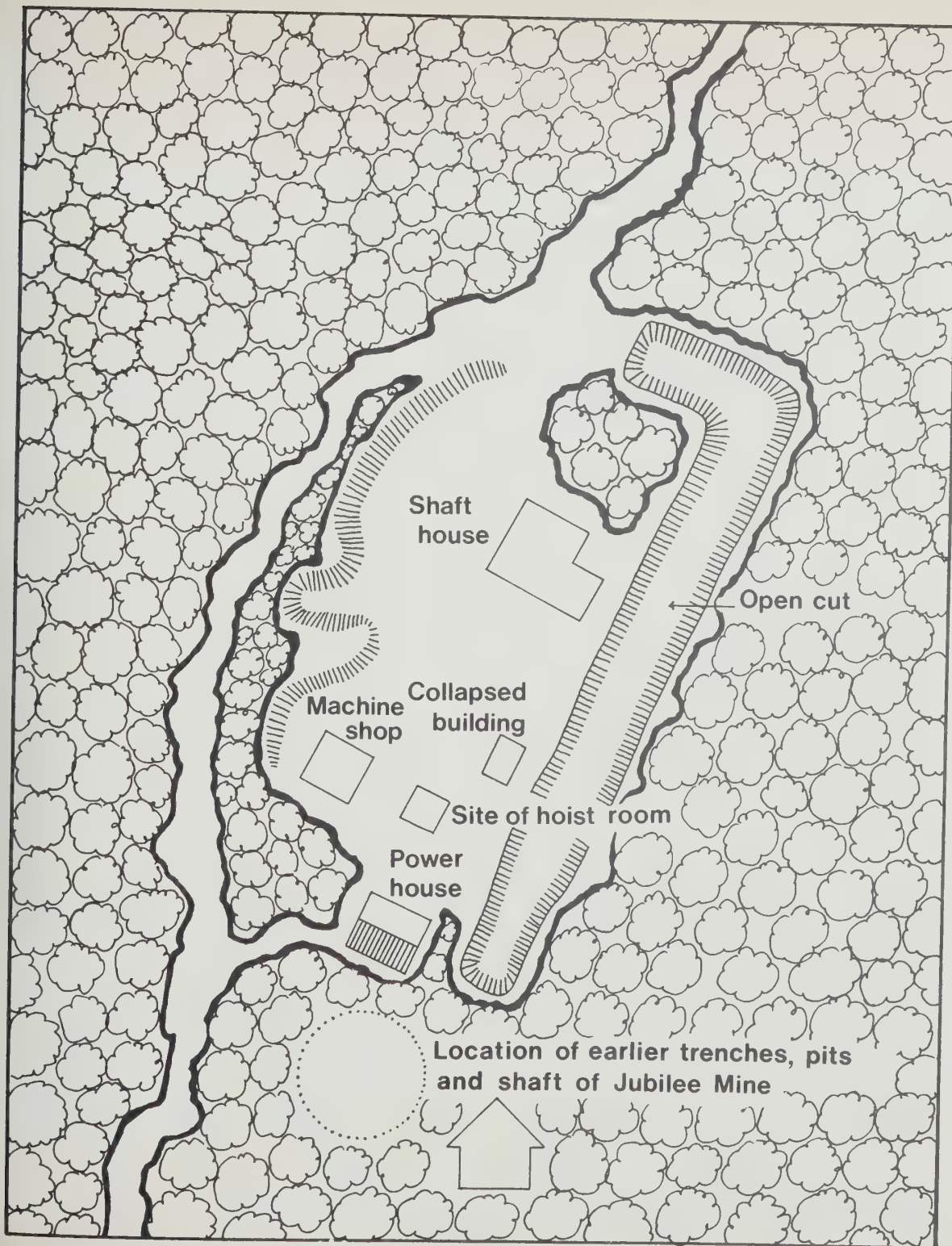
The Big Master, a mine site characterized by technical developments in mining and milling of the 1930's and 1940's, was similar in condition to the Laurentian. There were many buildings, all in various states of disrepair. It was not representative of the mainstream of the gold mining period under study, yet it illustrated the next phase of development in the mining and milling industry. Because of its technological incongruity and built environment, it had both advantages and disadvantages. The buildings and structures reflected these new techniques both in function and materials: the massive timber-planked settling tanks, the electrician's shop, the fuel tanks, the diesel generator and the widespread use of concrete in foundation work.

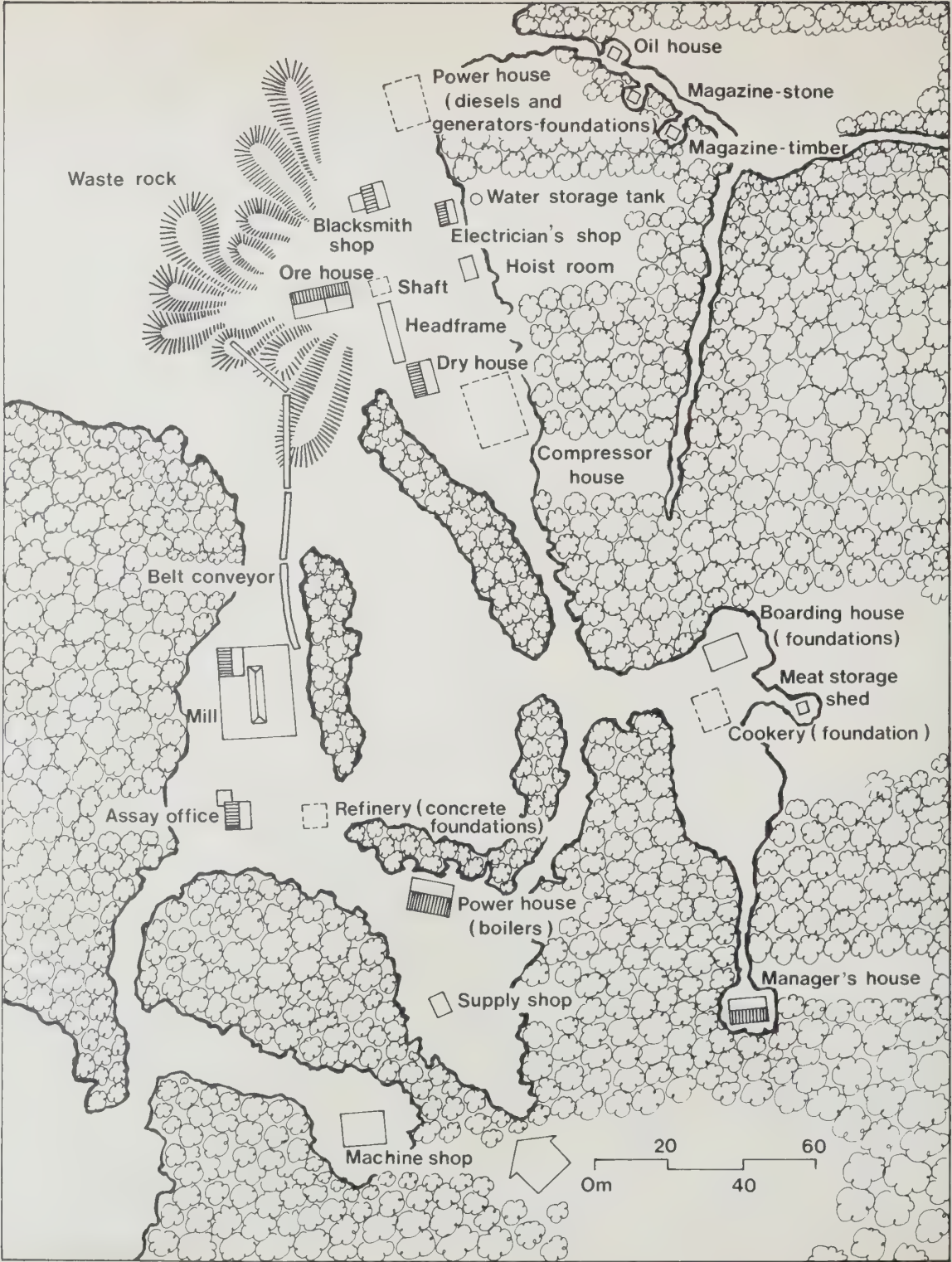














All this information indicated that the Gold Rock area retained much of its integrity as an old mining site and thus had the potential to illustrate this industry. But the site was in danger of collapse through weathering and the scavenging activities of man. Thus it would not last much longer and, given its potential, required immediate attention. One last task remained, however: to assess Gold Rock in comparison with other historically similar sites throughout the region and the Province.

While comparative assessment is in fact the last research phase occurring after the on-site examination, it is included here because it fits closely with survey activity. Without concrete experience with the Gold Rock site no comparative assessment would be possible, since it was difficult to adequately correlate age and location of sites with the quantity and quality of buildings and artifacts that remain. A key consideration in heritage conservation is whether or not a specific site best represents that particular aspect of an activity in human history. It may be the case that a number of sites of comparable value exist. In such a case, an evaluation procedure must aid in determining which is the best to represent the particular feature of Ontario's heritage.

During the documentary research a number of sites had been identified as being comparable to Gold Rock, both in period and level of technical development. In addition, some sites had been recognized as having more significance within the region, in terms of factors such as longer or bigger operations, higher and larger workforce. Although a number of these sites had been dismissed through the earlier work of the Ministry of Natural Resources, a number, on paper at least, remained as pretenders to the heritage throne. A comparison between these places and Gold Rock was required prior to further work on Gold Rock. Several sites were quickly dismissed. Some had already been checked by MNR staff during

their preliminary survey that resulted in the discovery of the resources of Gold Rock. Others were eliminated through a cursory review of recent geological reports in which the authors had taken the trouble to note old sites. Yet a number remained to be checked. Contact was made with regional geologists, and based on their work and travels, a number of sites were written off, having been destroyed or having a limited range of resources in comparison to those of Gold Rock. A final check of resources at remaining sites was made through viewing the most recent series of aerial photographs. The results of comparative site assessment revealed that Gold Rock was the last gold mining and milling site of its type and era in the Province with its technology largely intact. Clearly, the Gold Rock mining landscapes were worthy of conservation.

34. Massive settling tanks of white pine at Big Master.





35. Waste rock radiates from the headframe at Detola.

36. Going, going . . . : The boarding house, Detola.

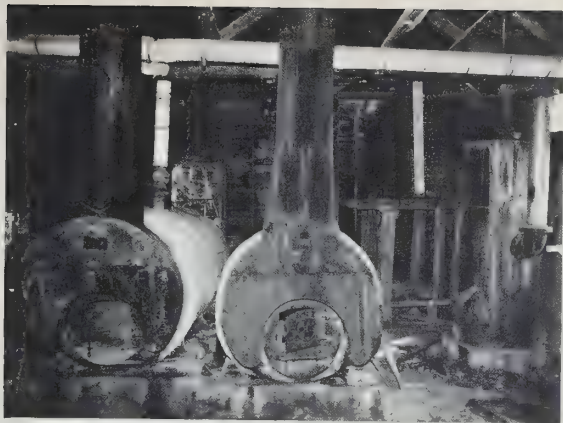


### 3. A conservation programme for Gold Rock

The quality of the resource of Gold Rock, the four mine sites, appeared to be exceptional. In Canada, mining themes have usually been presented as part of other pioneer exhibits rather than as independent attractions. Heritage Park in Calgary, Alberta, portrays pioneer life in a park setting and includes an exhibit on the wilderness life of gold miners. At Atikokan, Ontario, a permanent lumbering and mining exhibit is on display at the local museum, complete with logging engine and train. At a larger scale, the British Columbia Museum of Mining at Britannia Beach exhibits artifacts and equipment relating to mining on the site of an old mine. The museum features underground tours, gold panning exhibits, demonstrations of old and new mining equipment, tours of the work camp, and history trails.

While there are few schemes such as this in Canada, the United States can proudly boast many mining exhibits. Analysis of the presentation of these mining themes revealed during the course of the Gold Rock study that many successful enterprises have as their basis an existing mine or mines, various types of buildings, as well as a variety of working and preserved machinery. Ancillary features such as underground tours or mineral exhibits were also included. The mine sites at Gold Rock with their associated features, buildings and machinery, appear to possess many of the key elements which have ensured successful schemes in Georgia, Michigan, Wisconsin and Minnesota.

Recognizing the potential for conservation at Gold Rock, together with the vehicle capable of realizing it, the mine sites offer a unique opportunity to conserve an important and illustrative phase of the Ontario gold mining and milling industry, an aspect of the industry not adequately represented anywhere



37

else in the Province. The four mine sites at Gold Rock do not all offer exactly the same potential for conservation and interpretation. Conservation strategies for each site can encompass a variety of actions. Stabilizing ruins, tracing out the location of former building sites and circulation lines, repairing and rehabilitating structures and restoring certain pieces of machinery to working order are all possibilities. Each site has distinct capabilities determined by factors such as the function, condition and importance of buildings and machinery that remain.

For instance, due to the disappearance of several structures at the Detola mine site, there is an incomplete physical context by which the better preserved buildings can be placed, both functionally and visually. The site does lend itself, however, to illustrating how certain components functioned within a mine site, in this case:

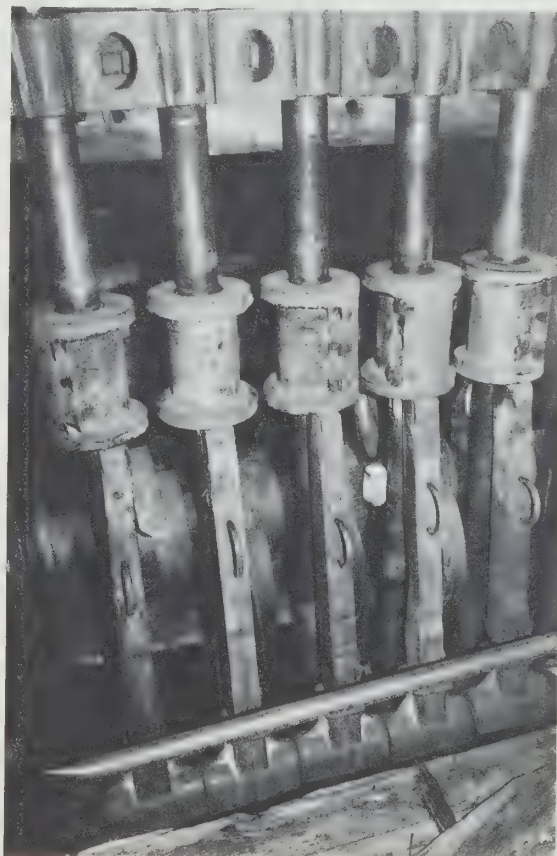
- a mill and its machinery;
- a power house;
- a shaft and headframe area.

The mill and headframe are capable of being exhibits in themselves, while the power house can display



38

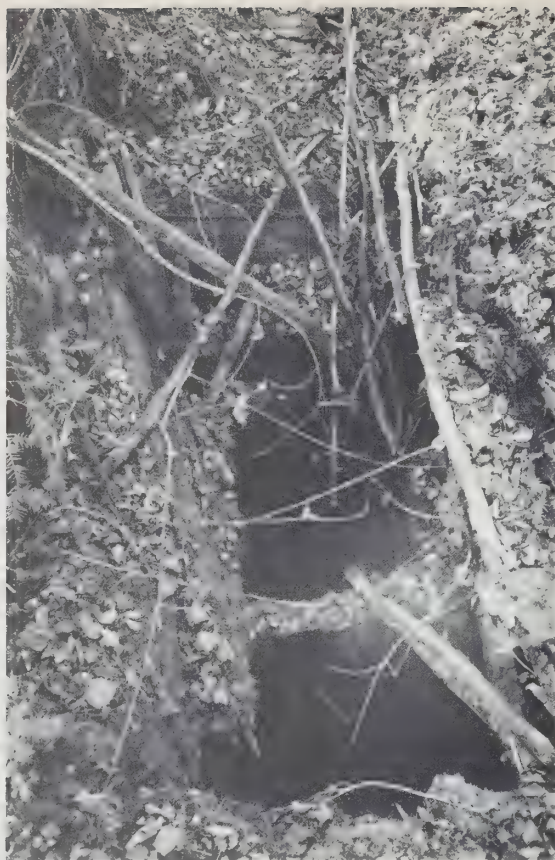
The variety of buildings, structures and machinery at Laurentian present exciting opportunities for conservation, education and tourism: power house interior (37); boarding house (38); and a battery of five stamps (39).



39

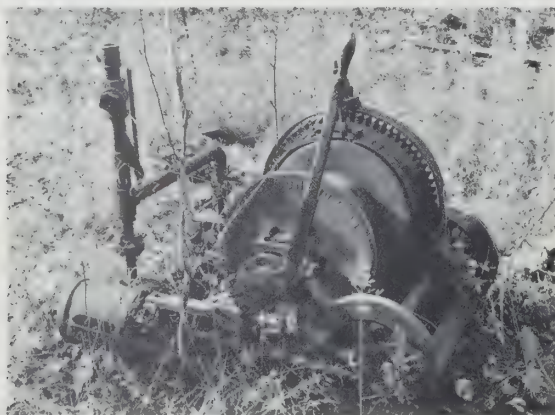


40. Test shafts at Elora represent exploration and development techniques not found at other Gold Rock mine sites.



40

41. A single-drum hoist sits rusting in the grass, Elora.



41

other exhibits comprising written, photographic, and other materials primarily depicting the history of the Gold Rock area. As an interpretative centre giving meaning and relevance to all aspects of the development of gold mining in this area, the site would have great merit.

As a contrast, the Laurentian site is characterized by a number of mine buildings and structures in various states of disrepair. Much patching up is needed at this mine site so that an exciting and interesting model mine site open to the public view can be promoted. The potential in this area appears excellent and the opportunities to present to the general public a fairly complete mine site, unattainable at other sites in Gold Rock and elsewhere, is unique. The key to the potential of this site, however, rests in sensitive structural stabilization and selective restoration, a prerequisite to the acceptable conservation of the Laurentian Mine site.

Whereas the Detola site can set the general scene for the Gold Rock area, with perhaps working exhibits of certain components, the value of the Laurentian site lies in its potential for depicting, as near as is practicable, a gold mine site of the early 1900's and the methods and processes utilized to obtain refined gold from crude ore.

The Elora mine site, in an extremely dilapidated state, offers limited opportunities. The surviving structures are capable of providing reclaimable material for use at other mine sites in their respective restoration and repair programmes. Other mining machinery and equipment is also capable of re-use at other sites, particularly the old single-drum hoist, mine cars, track, pump, ore bucket, drills, and drill steels.

The real potential of the Elora site rests with the examples of past exploration and development tech-



niques such as trenches, test pits, and shafts, that are not apparent at the other mine sites. To exploit these features it will be necessary to clear bush and the top-soil in this area to expose veins and show why and how the various exploratory techniques were used.

The conservation potential of the Big Master mine site was only briefly examined due to its technological incongruity when compared to the other mine sites and their major period of production. More detailed analysis is required of this site, as well as further study of mine sites that better depict Big Master's period of mining operations, before a firm commitment can be made to conserve the site. While the mine site does possess certain buildings that offer good potential for conservation, there does not exist the same potential that exists at the Detola or Laurentian sites. It provides neither a good opportunity for a return to an operational state nor an opportunity to fully represent the mine site as it existed in its heyday.

The potential of each site, the general conservation strategies, the on-site survey, and the documentary research, all appear to point toward fairly basic conclusions. The Gold Rock mine sites are representative of gold mining and milling operations in northwestern Ontario. They are capable of displaying all of the technical, social and economic aspects of this industry which dominated the early growth of gold production in the Province. Not only do the sites embody those characteristics but they illustrate equally well the nature of gold mining and milling across North America at the turn of the century. And perhaps of most importance, no other area in the region or the Province contains such well-preserved and representative historical resources by which this important phase in the industrial and social evolution of Ontario can be portrayed.



42



43



44

Further study is required at Big Master to determine appropriate conservation measures in light of the wide range of buildings and machinery. Of all the features at Gold Rock, the refining furnace (42), meat storage shed (43) and stone magazine (44) are all unique to Big Master.

In light of Gold Rock's many attributes, the survey team made several recommendations to the Ministry of Natural Resources concerning immediate protection, long-term conservation and general planning initiatives:

- that immediate action be taken to ensure that the buildings and structures at the Laurentian and Detola mine sites be subject to repair and other remedial measures to ensure adequate protection from the effects of weather and vandalism;
- that the foregoing action be recognized as a first step in the conservation of these resources and that further measures be taken to realize the full conservation potential of the mine sites, particularly the Laurentian and Detola;
- that measures be initiated by the Ministry of Natural Resources to maximize the protection and conservation of the mine sites, structures, and machinery within the Gold Rock Study Area;
- that the designation of a Historical Park or historical zone within another class of Provincial Park would be suitable means by which the objectives

of the foregoing recommendation may be achieved; and

- that any strategic, district, management, zoning or other plans that are prepared by the Ministry of Natural Resources and which include the Gold Rock Study Area within their area of concern, either spatially or functionally, have regard for existing heritage resources, their protection, and conservation.

These recommendations recognized that unless there is immediate protection for the mine sites, there will be very little to conserve within the next few years. Additionally, protection of this landscape and its features was not considered in isolation. Any conservation activity is to be carried out in the context of land use planning activities of the Ministry of Natural Resources.

Clearly, the study of the Gold Rock mine sites — an abandoned industrial landscape cocooned in an isolated area of northwestern Ontario — creates an awareness of the importance and value of a unique environmental feature, and points the way for its future protection.



45. The shafthouse at Laurentian silhouetted against the tree line.



## References

1. Campbell and Cuming, *Mines and Mills at Gold Rock*, unpublished manuscript report, Historical Planning and Research Branch, Ministry of Culture and Recreation, March 1979.
2. Government of Ontario, *The Public Lands Act* (RSO 1970 as amended).
3. Government of Ontario, *The Ontario Heritage Act, 1974*, Section 2.
4. *Ibid.*, Section 47(b), emphasis added
5. Ministry of Natural Resources, *Ontario Provincial Parks Planning and Management Policies*, 1978.
6. Ministry of Natural Resources, *A topical organization of Ontario history*.



# Shifting sands

Cultural landscapes, provincial parks, and  
the case of Sandbanks

Ed McKenna

2. Lakeshore Lodge from  
above, 1980.





## PART I

### The Potential for Heritage Conservation in the Provincial Parks System in Ontario

In the history of heritage conservation in Ontario, public parks have a prominent role. Many of the first efforts to protect and manage heritage resources involved the creation of a park as the appropriate setting for an historical site. In 1824, on the old battlefield at Queenston Heights, a small park was designated and a monument erected to commemorate Sir Isaac Brock's victory over the Americans in 1812. Later in the nineteenth century, other historical sites of military significance in the Niagara Peninsula were protected in parks created by the federal government, and in 1895 the first of these was transferred to the management of the newly-formed Niagara Parks Commission.<sup>1</sup> Over the next fifty years, several more parks were established by public agencies to commemorate and preserve significant military sites and locations associated with the first Loyalist settlers.<sup>2</sup>

By the 1950's, heritage conservation activities in public parks in Ontario had been extended to include major restoration and reconstruction of historical features. The best known examples of such projects undertaken by the Ontario government are Upper Canada Village, Huronia Historical Parks, and Old Fort William, the last of which, in 1973, the last and most elaborate park of its kind to be established in the province.<sup>3</sup>

During the same period, there was considerable growth in the number and variety of Ontario's provincial parks. Many of these contained heritage resources of considerable significance, such as were found in Algonquin, Turkey Point, Inverhuron, Serpent Mounds and Sibbald Point provincial parks.

To help protect these resources, an Historical Zone designation was adopted as part of the Ontario government's park classification and zoning system that had been instituted in 1967.<sup>4</sup>

By the early 1970's, provincial parks were well-established as areas where heritage resources could be protected and managed. Heritage conservation activities, however, were concentrated at two management extremes: one was the reconstruction of a prominent heritage feature on a site especially selected for that purpose, such as Old Fort William; the other was the passive and minimal protection afforded heritage resources found in provincial parks established for recreation purposes and to conserve the natural environment. With the rapid growth in provincial parks, and, consequently, in the number and variety of heritage resources found within them, it was apparent that a broad management strategy was required for heritage conservation activities.

The response of the Ontario government was to begin to develop a systematic and planned approach to the management of heritage resources in open space or park settings. In 1972, the Historical Research Unit within the Division of Parks was expanded to become the Historical Sites Branch in the newly-formed Ministry of Natural Resources (MNR). That year, an Historical Parks class was proposed for the provincial parks classification system.

The new Historic Sites Branch set about the development of an Historical Systems Plan, a comprehensive, forward-looking, and rigorous approach to the creation of historical parks and historical zones in

parks of other classes. In these carefully defined areas, the protection and development of heritage resources was to be the primary management objective. The Historic Sites Branch also undertook research into heritage resources to provide information for the master planning programme of the Division of Parks. Each of Ontario's provincial parks was to be managed according to goals and objectives established in an approved master plan, the first of which had been instituted at Pinery Provincial Park in 1971.<sup>6</sup> The description and assessment of heritage resources, together with guidelines for their protection and use, were to be key components of the master planning process.<sup>7</sup>

The new Historic Sites Branch enjoyed an industrious and highly productive period during its first years of operation. It produced an impressive Historical Systems Plan: *A topical organization of Ontario history*, a comprehensive delineation of significant themes in the province's history; an *Historical resources evaluation scheme*, a tool for assessing areas containing heritage resources according to their suitability for Historical Parks; and, *Historical zones and historical areas*, a paper that provided a definition and criteria for the designation of historical zones within provincial parks. In addition to its efforts in planning, the Branch produced a prodigious number of research studies on heritage resources in provincial parks and areas of potential park development. By 1976, more than two hundred and fifty of these research reports had been completed, a number of which have since been published.<sup>8</sup>

Such an outstanding effort in research and planning was deemed worthwhile because the provincial parks system held out enormous promise for the conservation of heritage resources. Today, in Ontario, there are 130 provincial parks occupying 10,561,507 acres, or about 3.9% of the province's total area.<sup>9</sup> As the research studies revealed, virtually every park

contains important elements of Ontario's man-made landscapes, many of which have provincial heritage significance. Even in northern Ontario, where today a wilderness environment prevails in most provincial parks, archaeologists and historians have discovered considerable evidence of the activities of prehistoric peoples, as well as of the early Canadian fur trade and later the Ontario forest and mining industries, to name the most important historical activities. Ontario's provincial parks are distributed throughout all regions of the province, affording the opportunity to protect a wide variety of heritage resources. *A topical organization of Ontario history* has identified thirteen prehistorical and historical themes and one hundred and fifteen theme segments that can be represented in provincial parks. It is an objective of the provincial parks system to see that all these themes are represented in Ontario's public open spaces: in Historical Parks, Historical Zones in parks of other classes, and "... through significant landscape-related historical resources protected by other public agencies and public interest groups."<sup>10</sup>

This commitment is supported by Ontario's provincial parks policy which was given official approval by the provincial government in May, 1978. A chief objective of the policy is "... to protect provincially significant elements of the natural and cultural landscape of Ontario", and to provide opportunities for cultural heritage appreciation. Principles guiding the management of the system include those of representation and variety to ensure "... the best representatives of our heritage will be included in the park system" in a "wide variety of ... cultural landscapes and features".<sup>11</sup>

To this broad commitment can be added another important potential benefit of provincial parks to heritage conservation. Provincial parks provide a rare opportunity to explore new methods for the management of heritage resources as yet untried in

Ontario, but with great potential for application to open space throughout the province. The park in this perspective is like a laboratory for experiments in heritage conservation technique, in the same way that parks at present often serve as models for the efficient use and conservation of natural resources. Appropriately, education and research objectives are major purposes behind the Historical Parks classification.<sup>12</sup> So, too, is interpretation, and with more than ten million visitors to provincial parks a year the opportunity to demonstrate directly to the public the benefits of the efficient management of heritage resources is very great.<sup>13</sup>

### The Experience and the Disappointment

The 1972 changes in the objectives and techniques of park development promised great benefits to heritage conservation in the parks and corresponding benefits to the park system and its users. But these potentials remain for the most part unrealized.

The first front on which prospects for heritage conservation rely is the master planning programme. The master plan is to provide for each park the guarantee that heritage resources will be protected and managed.<sup>14</sup> But (by May, 1981) out of 131 provincial parks, only 26 have approved master plans. This small group comprises fifteen Natural Environment Parks, six Recreation Parks, two Nature Reserves, two Wilderness Parks, and, finally, one Historical Park — Petroglyphs Provincial Park. The 105 parks awaiting completed master plans have been classified as follows:<sup>15</sup>

Recreation Parks	65
Natural Environment Parks	22
Nature Reserves	11
Waterway Parks	6
Wilderness Parks	1
Historical Parks	0

Most of these are at some stage in the master planning process. None, however, is yet proposed to be a provincial Historical Park (although there are two under consideration). Finally, within the parks of other classes only about one-third are to contain Historical Zones or Areas.

These figures reveal that the provincial parks system has some way to go toward achieving its objectives for the protection and management of representative heritage resources. For all the research and planning for heritage conservation undertaken by the Ministry of Natural Resources, there are remarkably few parks where deliberate heritage resource management programmes have been set in place.

Another indicator of the as yet unrealized opportunity for heritage conservation in provincial parks is the strong tendency to standardized practice in provincial park design and architecture, as seen in features such as entrance ways, signage and fencing. The frequency with which such features are repeated in parks throughout Ontario, with few modifications to suit local conditions, distorts the policy commitments to variety, distinctiveness, and representation, and runs counter to the objective, repeated in policies for each class of park, for development that "reflects the environmental character of individual Parks".<sup>16</sup> In the absence of master planning that takes advantage of a park's cultural landscape and its distinctive elements, only the most gross physical environmental concerns seem to have influence on the way the park is developed. The special opportunities each locale presents for public learning and enjoyment fail to be fulfilled under rule-of-thumb design.<sup>17</sup>

Perhaps the most disappointing aspect of heritage conservation efforts within provincial parks has been their inability, with some exceptions, to protect valued heritage resources even where an approved





3,4. The cottage row at West Point, with Lakeshore Lodge hidden in the trees at the rear of the view — at the turn of the century and in 1980.

master plan and an historical zone system has been established. In Algonquin Provincial Park, for example, we have recently witnessed the deterioration and eventual removal from the park of two structures of unquestioned provincial historical and architectural significance — Nominigan Lodge and the Turtle Club Lodge. These losses have occurred in Ontario's first provincial park (1893) and in a park that stands as the symbol of the "conservation ethic in practice" to the residents of this province and to many outside. Moreover, the heritage resources in Algonquin Park have been the subject of seven separate government studies. Each has stressed the value of Algonquin's heritage to the people of Ontario; two have focussed on the value of the Turtle Club and Nominigan Lodge in particular.<sup>18</sup> When the Algonquin Provincial Park Master Plan was approved in 1974, 86 areas totalling 5,000 acres (including Turtle Club and its environs) were designated for protection within an historical zone system.

The Plan stated:

Basic management direction is to preserve sites of historic or archaeological significance. Any site discovered dating prior to 1940 is given interim protection pending study. Important sites covering the scope of the Algonquin historic zone system will be preserved and protected, and in some cases restored.<sup>19</sup>

Five years later, very little action had been taken to fulfill the specific commitment to heritage conservation in the Algonquin master plan, and as a consequence, heritage resources of inestimable value were lost forever.<sup>20</sup>

Yet, despite these vicissitudes, the great potential for the protection, management and enhancement of heritage resources in Ontario's provincial parks

remains. The case of Sandbanks and Outlet Beach provincial parks provides, as we shall see, a great deal of evidence confirming both chequered past and bright promise. The great expectations shared by those who put together the strategy to conserve heritage resources almost a decade ago have led to some crushing disappointments. Somewhat daunted, we move into the 1980's and the planning of a number of new and existing parks. It seems clear that in order to improve prospects we must take some measure of the basic difficulties that have afflicted this enterprise and consider some corrective responses.

## The Roots of the Problem

### 1. Prevailing Attitudes Towards Parks

A major force behind the creation of Ontario's first parks was the desire to protect places of natural beauty from the excesses of commercial and industrial man. Such was the chief motivation of the government of Ontario when it established Queen Victoria Niagara Falls Park in 1887 as the first park under provincial jurisdiction.<sup>21</sup> Several broad intellectual currents run through the history of the creation of Ontario's parks system that strongly reinforce the idea of parks as uninhabited open space established for the protection of nature. They include the beliefs that man and nature are separate and distinct entities; that beauty is defined by qualities found in nature; that there is a unity and order in nature that stands in contrast to the ugliness and chaos of environments created by industrial man; and, that nature provides a balance in man's life, affording a place of refuge and recuperation from urban environments in which he normally lives. In the 1960's, an attempt was made to revise many of these ideas because they had produced a mental and physical compartmentalization of nature that was in a large part responsible for the depredation



5,6. The front porch of Lakeshore Lodge, on the northerly, original wing – before the turn of the century and in 1980.



of the natural environment. We were told that man and nature were, in fact, inseparable, that no environment was free from man's influences, no matter how physically remote. On a small planet with finite resources only a view of man as integrated with nature makes sense, and will guarantee that we do not destroy the environment that sustains us.

The development of the provincial parks system attempted to encompass some of the new environmentalist attitudes. By including man-made resources in parks objectives, the new system acknowledged the close relationship between man and the natural environment, and sought to protect, through cultural landscape management, the significant physical representations of the changes in that relationship over time.

This view of parks — as *landscapes*, rather than as natural environments — is a relatively new one, and will take some time to gain popular acceptance. The popular view, and perhaps more important, the professional bias in open space planning, still favour park environments that are most natural in *appearance*. The persistence of this attitude in Ontario is supported by the province's enormous physical dimensions and its huge extent of uninhabited territory. Planning and design for open space, while under increasing pressure from the number of recreation users, still can provide successfully for predominantly natural areas within parks of all classes. The tension created in the attempt to keep parks apparently natural and yet accommodate recreation use is nevertheless mounting. We can hope for a resolution in a planning approach that integrates man and nature in provincial parks. But at the present time, this tension is still viewed as the "preservation/recreation dichotomy",<sup>22</sup> so that despite provincial parks policy commitments to the protection and management of whole landscapes, rather than only pristine natural environments, the

long-standing prejudice for the natural *versus* the man-made persists. Our landscapes heritage is *both* natural and man-made — *both* require our utmost conservation efforts.

The problem for heritage conservation created by such attitudes can again be illustrated in Algonquin Park, a part of Ontario renowned for its natural beauty. To many, it seems contradictory to Algonquin's purpose to attempt to protect and manage man-made heritage features in such an environment. Moreover, when these heritage features are revealed to be largely the products of industrialization and commercial tourism that have threatened to destroy the natural beauty of the park in the past (for example, industrial archaeology representative of the forest industry and the railway, and lodges, cottages and other remnants of the early tourist industry), this apparent contradiction becomes even larger in the minds of many.

The effect of such an attitude in provincial parks is often to regard man-made objects as intrusions in natural park environments. This attitude has in some instances been translated into explicit park management policies. One requires that "all physical improvements on acquired lands will be removed", and that "non-conforming uses" and private leases associated with past activity in the park area be terminated.<sup>23</sup> Only under specific, prescribed circumstances are man-made features permitted to remain. There are many cases in which no demolition actually takes place but in which potentially valuable structures are left to rot. The effect seems to be to disguise, as natural wilderness, areas which are really the residues of recent human history.

The traditional preference for parks as natural environments has additional impact in design terms. Aesthetic features within a park area are often defined in relation to an *idealized* natural environment.



There is much use of natural materials organized in natural formations to act as buffers and transition zones between different park use areas. And, in the management of natural features, there have been attempts to blur the signs of man's influence, as in the case of old fields, for example, for which periodic burning has been prescribed to enhance woody growth.<sup>2 4</sup>

Although Ontario's provincial parks system attempts to find a new relationship for man with nature, and to help define park environments in landscape terms, these new principles rest upon a planning and management structure still much influenced by traditional and professional perceptions of popular attitudes toward parks as "natural" environments.

## 2. Economic Constraints

Many of the good intentions supporting heritage conservation expressed in the Ontario provincial parks policy would have been put into practice by this time had the system developed apace. When the parks system first was devised, the day when all parks would have master plans was seen as not too distant. It was thought that heritage resources within parks, and lands acquired for parks, might remain in temporary suspension, but only for a short time before they would be assessed and assigned management programmes under a master plan. However, economic conditions have changed since the heady days of the late sixties and early seventies when the policies and plans for the provincial parks system were devised, and current constraints on government spending have altered provincial priorities. Restraint in government spending has had the unfortunate effect of pitting park development against its normally symbiotic partners – forest, mining, wildlife, water and land management. The entire engine behind the development of Ontario's provincial parks system has slowed down and in some areas stalled

altogether, and the share of tax dollars that had fuelled its activities has been considerably reduced in real terms.<sup>2 5</sup>

Under these conditions, the protection of heritage resources in parks is jeopardized. In an area required for park purposes when development funds have been cut back, heritage resources are left in a kind of limbo, and can quickly deteriorate through exposure to natural elements and to "treasure-hunters" and vandals. Unlike many natural park resources, man-made features possess no regenerative qualities, and so demand constant maintenance simply to halt their deterioration in the cases where conservation is the objective. The cost of arresting the process of decline in heritage resources is considerable and, in a time of tight budgets for all government departments, can be undertaken only where there is ample justification. Unfortunately, this justification is provided in the master planning process that itself is subject to severe fiscal constraints. Which brings us full circle.

We in the heritage conservation field now find ourselves looking backward to the rosy days when the Provincial Parks System, the Parks Classification System, and the Historical Systems Plan were first devised, and reflecting somewhat sadly on our present position. Had we known then that the entire heritage planning and management process would be hobbled before the end of the seventies, after considerable lands had been acquired, but before the mechanisms to manage those lands as provincial parks had been implemented, we might have looked harder at other strategies rather than having spent so much time and energy on systems planning and research reports. What now of our contribution to master plans that may never come into existence before the heritage resources, albeit carefully researched and categorized, succumb to natural elements or the abuses of man?

### 3. Government Re-organization

A further basic problem was the removal of cultural resource planning and management expertise from the Ministry of Natural Resources in 1975. At the time, the Historical Planning and Research Branch (formerly the Historic Sites Branch) of the Parks Division of the Ministry of Natural Resources moved, with all its systems planning and research staff, to the Heritage Conservation Division of the new Ministry of Culture and Recreation. While the Historical Planning and Research Branch attempted to maintain a role in provincial park research and planning, this had to be balanced against responsibilities for the heritage conservation component of all provincial government land-use planning activities. Thus Parks Division lost all its staff expertise in the management of cultural property, almost at the same moment that the first chilling breezes from the cold winds of fiscal restraint were being felt. Moreover, only three provincial park master plans had been completed when the Ministry of Natural Resources lost its heritage conservation staff. After this time, master planning teams rarely included anyone with heritage planning expertise. Historical Planning and Research Branch staff were confined to the role of reviewers of the master plans. This reactive role for heritage planners often placed them in an adversary position to the master planning team on the issue of the treatment of cultural property in provincial parks.<sup>26</sup>

The master planning for Quetico Provincial Park provided an instructive example of the problem. The plan, prepared without heritage resource expertise, did not designate historical zones to protect the park's considerable historical and archaeological resources. Despite assurance that wilderness zoning would adequately protect the historical resources, there were no guarantees of protection and little positive action. The Ontario Provincial Parks Council,

for one, expressed "... concern and disappointment ... that the systems approach to Ontario history had not been utilized in master planning the park."<sup>27</sup>

### 4. The Description and Assessment of Cultural Landscape within the Historical Systems Plan

Finally, it has become evident that there are problems with the techniques of description and assessment of cultural landscape prescribed by the Historical Systems Plan. The limitations of information produced according to the research report format prescribed by the Historical Systems Plan were revealed when Parks Division planners attempted to use it without guidance from specialist heritage planning staff. Parks master planning teams found themselves trying to assess cultural landscapes and plan for their future use with only an over-large and too-often dreary manuscript to work with: the park history research report. Stuffed with a myriad of fundamental but all-too-academic detail on the archaeology, history, and architecture of a park, these reports could rarely be translated into useful resource-based information for a planner without a skillful interpretation by someone experienced in heritage planning.

One of the major causes of the academic nature of these research reports was their overriding concern with questions of *historical* significance. This was a response to the goal and objectives of the provincial parks policy that, as we have seen, emphasizes the protection of "provincially significant" heritage resources and cultural landscapes.<sup>28</sup> Accordingly, the Historical Systems Plan, in establishing criteria for designating areas as Historical Parks or Historical Zones within parks of other classes, placed the greatest weight on historical significance at the provincial level. Unless historical significance could be demonstrated, then an active management programme for cultural property would not be implemented.<sup>29</sup>

Stressing the criterion of provincial significance ensured that provincial parks would be developed where they were needed most for the protection of natural and cultural resources. It also was intended to contribute to the development of a balanced and representative parks system. Similarly, the Historical Systems Plan stressed significance to ensure that public funds were directed at resources of unquestionable heritage value, through a system that was objective and fair.

Unfortunately, the exclusive use of the "historical significance" criterion created several problems. First among these was establishing a definition for provincial historical significance. Then, a means of determining which heritage features actually possessed this significance had to be determined. As most historians will confess, what is significant about the past is always relative to the particular perspective brought to bear on the question. As a consequence, debates about historical significance can be prolonged endlessly, as historians continue to research a problem and explore new points of view. To get around this difficulty, heritage conservationists have devised a plethora of rating schemes, point systems, and committee review processes to determine which heritage resources warrant protection and management. For Ontario provincial parks, a very sensible approach was found in *A topical organization of Ontario history*, which defined the kind of history deemed to be significant to the provincial parks programme and then offered a simple rating system for judging the relative importance of specified provincial historical themes. *A topical organization of Ontario history* provides focus and direction for the development of the provincial parks system, but it cannot be used as an arbiter for all questions about historical significance, particularly when those questions concern regional and local levels of importance. As a result, a question about historical significance can be prolonged and left

unsolved, and the application of protection and management programmes to heritage resources delayed. Significant elements of the cultural landscape deteriorate, and are sometimes lost.

The most conspicuous example of this situation is found in Algonquin Park. As one of the first Ontario parks to get a master plan, it was recently subjected to a five-year review.<sup>30</sup> Concerning the failure to establish a formal historical zones system in the park in the five years since it was prescribed by the original master plan, the Review explained that the chief impediment had been the criterion of historical significance. Now, as we have seen, no other park in the province has been subjected to more field work, research studies, and planning for heritage resources, nor is any park as widely recognized for its provincial historical importance as Algonquin Park. Yet, notwithstanding designation of some zones, a management programme for heritage resources had not been implemented because the criterion of historical significance was judged not to have been satisfied — "the necessary field work and research data are lacking...", explained the Review.<sup>31</sup>

Clearly, as long as historical significance is the chief determining factor, the protection and management of heritage resources will be in jeopardy. Even in those places where the great significance of heritage resources is commonly accepted, and numerous authoritative studies to demonstrate their significance have been undertaken, debate can always be prolonged about what is most important about the past and how that should be determined. And in the interim, heritage resources like the Nominigan Lodge and the Turtle Club are left unprotected and unmaintained, usually with unfortunate consequences.

A further limitation of the criterion of significance is that it often necessitates a management strategy



of some form of preservation. The development and management policies for Historical Parks state:

Management strategies for individual historical resources may range from allowing cultural landscapes and features to evolve without human interference, to managing cultural landscapes and features so as to stabilize their present condition, to restoring and reconstructing cultural landscapes and features . . . .<sup>32</sup>

While the widest possible range of management strategies is proposed here, the emphasis is on preservation: stabilization, restoration, and reconstruction. These management approaches support the view that the chief value of a cultural landscape feature is that which was invested in it at some point in the past. It follows that this historical value is protected best by maintaining the cultural landscape in a condition as close as possible to the one it enjoyed at the time its significance was acquired. To many, this means preserving cultural landscape features like artifacts, and so prevent them from undergoing further development.

Cultural landscape features treated this way usually become "constraint areas" on the planner's overlay map of the park. Such areas are essentially obsolete environments, which must be restricted to a very narrow range of uses, usually related to research and education purposes. Preservation of these areas is difficult and expensive; the more uses that are permitted, the greater their expense becomes. Given the many requirements that each provincial park must serve, especially the multitude of recreational demands placed on every available acre of land, it is far from surprising that park plans would avoid the isolation and expense of such exclusionary zones.

The isolation of heritage resources through a management policy stressing preservation ignores one of their most important characteristics: that heritage resources in provincial parks may be represented and understood best in their pattern in landscape. To treat heritage resources in our parks like artifacts, and cut them off from their relationship with the surrounding landscape, is to destroy much of their value. While it is necessary to mark out areas in the landscape, and moments in time, to give definition and meaning to our environment and our history, it is important that these significant incidents be related to their broader landscape context. An exclusive focus on temporal significance risks ignoring these contextual relationships.

Management by preservation is often appropriate for the protection of rare and irreplaceable man-made features whose production is irrevocably tied to specific historic moments. The cultural landscape, which comprises a multitude of such places in a constantly evolving web — far more than the sum of its component parts — is beyond the scope of such limited action. Preservation as a specific tactic to forestall or redirect inexorable change is clearly insufficient in this larger and more dynamic situation. More adaptive strategies are called for.

It is important, too that we in the heritage conservation field are aware of how a policy of preservation attached to values of historical significance limits our view of history itself. History is not simply a collection of separate incidents in which significant events were concentrated, but the story of man's changing relationships through time and to the present. This history cannot be well represented, therefore, merely by preserving isolated heritage resources. It seems to be understood best when attached to some evolving physical form, like landscape, which can express change while maintaining continuity with the past.

Finally, the most telling argument against the criterion of historical significance is that it has not provided a sufficient rationale to ensure the protection of heritage resources in provincial parks. The undisputed historical significance of the Turtle Club and Nominigan Lodge in Algonquin Park did not save these heritage resources — this value was judged not to be sufficient to offset the costs of preserving the two structures.

Although there are profound problems that arise from attributing value to heritage resources solely on the basis of historical significance, this “significance” criterion must remain as the foundation upon which the management structures for heritage conservation are erected. But it is only the foundation, and in our provincial parks we must recognize that the simple fact of the historical significance of a heritage resource is alone not enough to ensure its protection and management.

### **New Values for the Cultural Landscape**

Because of the high costs and management problems associated with cultural landscape in provincial parks, the constrained park budgets, the limited availability of expertise in heritage conservation, and the persistence of attitudes that favour natural over man-made resources, we must discover additional values for heritage resources to weigh against these factors. But what values? The answer lies in avoiding the view of heritage resources as isolated incidents in space and time, and in finding the meaning of their relationships as part of landscape and the reasons for their persistence through time.

We have seen that provincial park policy requires that man-made elements in an area acquired for park purposes be removed, unless they meet certain specific criteria.

The policy states that

All physical improvements on acquired lands will be removed unless they are in a location and of such a design as to be of value for park management or visitor services, or unless they are significant to the [Park] Reserve's history or complementary to its cultural landscape.<sup>33</sup>

It is notable that these criteria are fairly broad, and are *not* limited to historical significance. However, under the Historical Systems Plan, where, as we have seen, there is almost exclusive emphasis on the demonstration of provincial historical significance, the issues touched on by these criteria often are not addressed. Yet they are crucial to the protection of heritage resources. It is worth examining each in some detail.

#### **1. A Broader Definition of Historical Significance**

The first of these issues returns us briefly to the question of historical significance. However, significance in the foregoing quotation from provincial parks policy is defined not in provincial terms, but in the light of “. . . the Reserve's history.” As we have seen, the criterion of provincial significance is most important when new parks are being acquired to complement a developing provincial system. Today, however, such growth is not feasible, so that master planning for areas already acquired is a more important concern for the provincial parks programme. Of course, most of the parks being planned were acquired before the Provincial Parks System and Historical Systems Plan were established, and for reasons that had little to do with questions of provincial historical significance. Thus these broad system planning approaches contribute little to arguments for the protection and management of cultural property in such parks. What is needed is an

explanation of history pertinent to the immediate area in which the park is located, and hence a broader definition of significance to include history at the local and regional level — history, in a sense, that planners can use so that they can understand the meaning of local heritage resources.

This involves an extension of the approach used in *A topical organization of Ontario history*. Here, history had a focus appropriate to broad provincial park uses. It was described as "... a history oriented around activities and lifeways rooted in the landscape and physical environment and basic to human development . . . ."<sup>34</sup> This sounds complicated, but essentially it demands a *history of land use*, one which emphasizes the relationships between man and the physical environment. As man struggled to alter his habitat to meet his basic needs, he produced, in the process, what we call the cultural landscape. In attempting to determine the historical significance of heritage resources in a provincial park, we should concentrate our efforts on this problem, and identify the processes that occurred at the local and, when applicable, regional and provincial levels by which landscape of the park and its locale developed. This is history based not on themes of predetermined significance, but on local heritage resources. It is history explored from the ground up, to produce for planners a profile of the evolution of land use in the park area. With this information, the planner views his own responses to the park environment as a continuation of the changes in land use which can be observed in history. The planner can find in the nature of past changes the means to develop the park with a sense of continuity with the past. This not only facilitates the physical development of the park, but by maintaining a continuity between proposed park uses and local land use traditions, can ease the transition for local residents who often regard the creation of a provincial park in their locale as unnecessarily disruptive to their way of life. A

history of local land use contributes to a new level of public participation in the master planning process.

## 2. The Usefulness of the Cultural Landscape and its Elements

Provincial park management policy also suggests another value for heritage resources not normally examined within the Historical Systems Plan: the usefulness of heritage resources for park management and visitor services activities. The adaptation of heritage resources to new uses is a process requiring considerable expertise in heritage planning, architecture, and structural engineering. It is unlikely that a master planning team would include specialists with these backgrounds, yet this gap is not filled by information provided in studies conducted under the Historical Systems Plan where there is no provision for examining a heritage resource for its potential usefulness. Indeed, a negative approach is taken to park uses, by restricting activities in Historical Zones to all but the most passive uses. Activities related to general park operations or to visitor services other than historical interpretation are not permitted within the Historical Zone.<sup>35</sup> This is consistent with a preservation management objective but, as we have seen, may effectively isolate cultural property from the park development process. Man-made elements of the landscape, because they are associated with uses which are no longer permitted in a park, are usually neglected and eventually removed.

Unless the inherent usefulness of heritage resources can be demonstrated, then it is difficult to see how they can be adapted to meet park needs. Virtually everything we regard today as a heritage resource was produced, not in the hope that one day it would acquire provincial historical significance, but simply to accommodate some straightforward human needs and aspirations of the day. This use, of course, gave the man-made feature its value, and where the



feature has since come to be regarded as a "heritage resource", through its persistence in the landscape through time, this is usually because it has retained the value of usefulness into the present. It is fundamentally important when we assess man-made features in provincial parks that this value is examined critically. It may be discovered that the feature can continue to be useful for park purposes. This can be true of even the most common of commonplaces.

Our failure to produce information about the usefulness of heritage resources has combined with the limitations of a preservation management philosophy to permit park planners to ignore the many potential benefits of re-using cultural features, and to cause them to recommend the new construction of physical improvements for a park. When this happens, the costs can be threefold: heritage resources are made obsolete and redundant when they could have remained useful; existing facilities often are replaced at a cost greater than the cost of their continued maintenance; and a sameness in architectural quality is produced which reflects general provincial standards for new construction rather than local peculiarities found in each provincial park, and expressed in local heritage resources. As a general result, the attractiveness of a park to potential users as a special place is significantly diminished.

### 3. Design Principles in the Cultural Landscape

This last point brings us to the third general value of cultural landscape that, at present, is not considered within the Historical Systems Plan: the value of the cultural landscape and its elements in design terms. Each existing element of the cultural landscape is in part a response to the physical conditions that were recognized and interpreted in the area where the park has since been established. It is important that we identify and understand this response, both in the design of individual elements of the cultural

landscape, and in the way that man-made elements have been consciously shaped and ordered in the landscape pattern. With this information, the planner can learn much about the principles of design most appropriate to a particular environment, and these can be applied to new park development. This will ensure that the changes produced when the park is established are harmonious with the character of the landscape. Where man-made features are replaced, it also helps to ensure that an important aspect of their value is retained, and that the new development is equal to or better than existing development in the park area.

When the design values of the cultural landscape and its elements are described and assessed, it contributes to the provincial parks policy commitment to variety and distinctiveness. More practically, the design of cultural property and its relationships in landscape can provide the clues to practical problems in the design and construction of new structures required for park purposes.

\* \* \*

These values of cultural landscapes and their elements in provincial parks — their significance in terms of the history of local land-uses, their potential usefulness to park management and visitor services programmes, and the value of the design principles they incorporate — rarely have been explained in research reports prepared under the Historical Systems Plan. What is proposed here is that the description and assessment of cultural landscapes be conducted in such a way as to identify values intrinsic to the park itself. In this process, information is produced of relevance to the general problems confronted by the park master planning team, for it helps them to understand and make better use of the particular environmental configurations expressed in the local landscape. The Historical Systems Plan, on the other



7. The rural landscape of the "new" park — Lakeview Lodge and cottages in the foreground trees, Shoreacres farm beyond.

hand, was designed to find, through an analysis of heritage value in terms of provincial historical significance, those areas that might appropriately be acquired as new Historical Parks. This is quite a different problem from the development of a park master plan. One can hope, though, that the day is not far off when the selection of areas for Historical Parks will again be a priority for Ontario provincial parks.

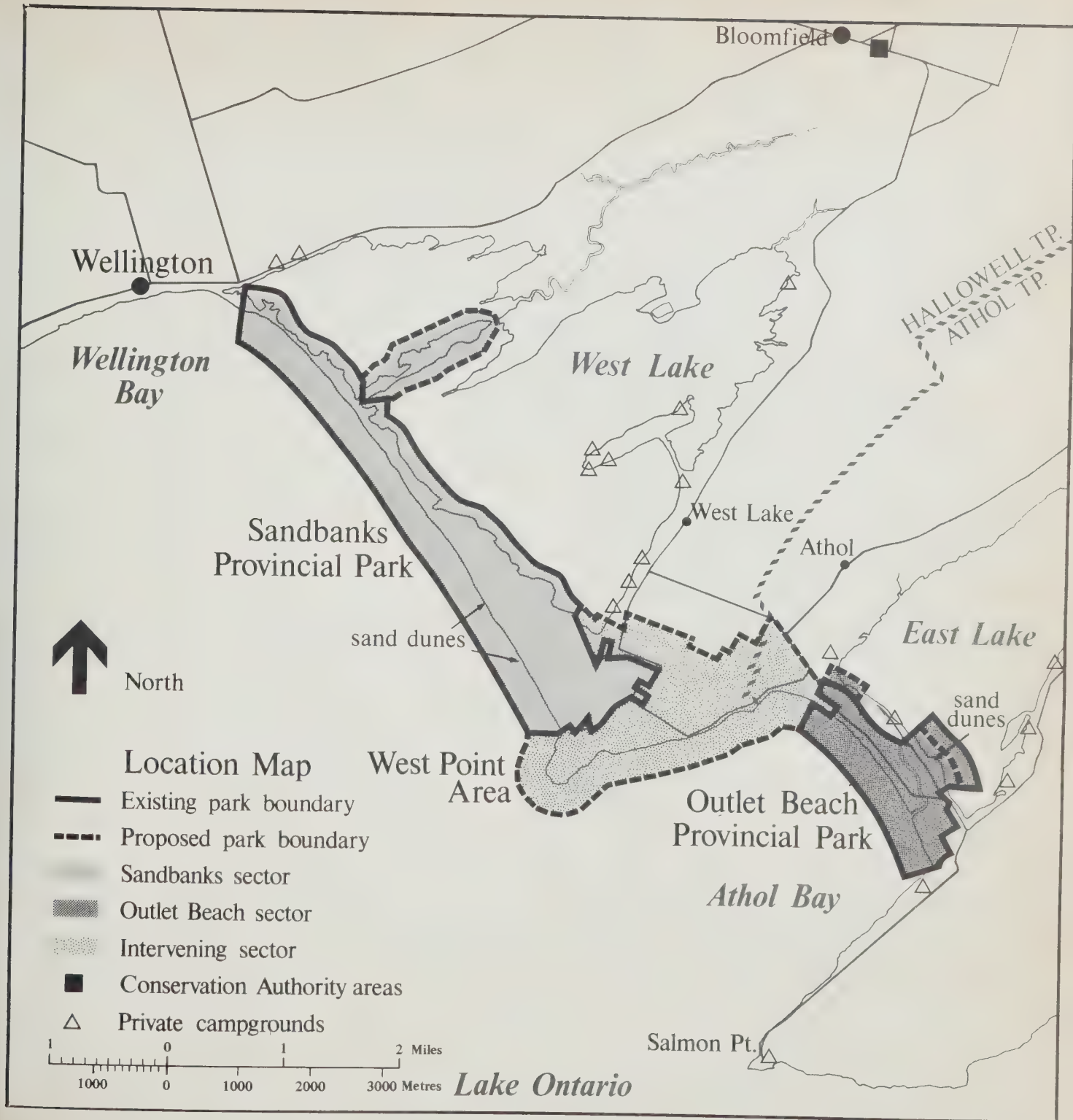
## PART II

### The Description and Assessment of the Cultural Landscape in Sandbanks Provincial Park, Prince Edward County

Recently, the author and colleagues in the Historical Planning and Research Branch took up a different approach to that outlined in the Historical Systems Plan for the description and assessment of cultural property in the proposed Sandbanks Provincial Park in eastern Ontario. Sandbanks Park was to be created by enlarging and amalgamating two existing provincial parks situated on an extraordinary natural feature — the sand dunes of Hallowell Township Prince Edward County — and incorporating an intervening agricultural area known as West Point. The protection of the sand dunes was enhanced by shifting intensive park development from the two original parks into the more stable West Point area.

The park was in the final stages of the master planning process when the Ministry of Natural Resources decided that better information was required about the local cultural landscape and its features. The decision that Sandbanks was to be classified a Natural Environment park, and the general areas in which the different forms of park development were to be directed, already had been determined.

Offering up the usual assessment of the provincial historical significance of heritage resources would not suffice at Sandbanks. A well-known structure within the park of established historical and architectural importance, the Lakeshore Lodge, was already in an advancing state of deterioration due to lack of funds for its preservation. Further statements on its significance could do little to ensure it would be better managed in the future. Moreover, much of the park could be regarded as man-made landscape, having been subjected to continuous occupation and agricultural activity for one hundred and fifty years.



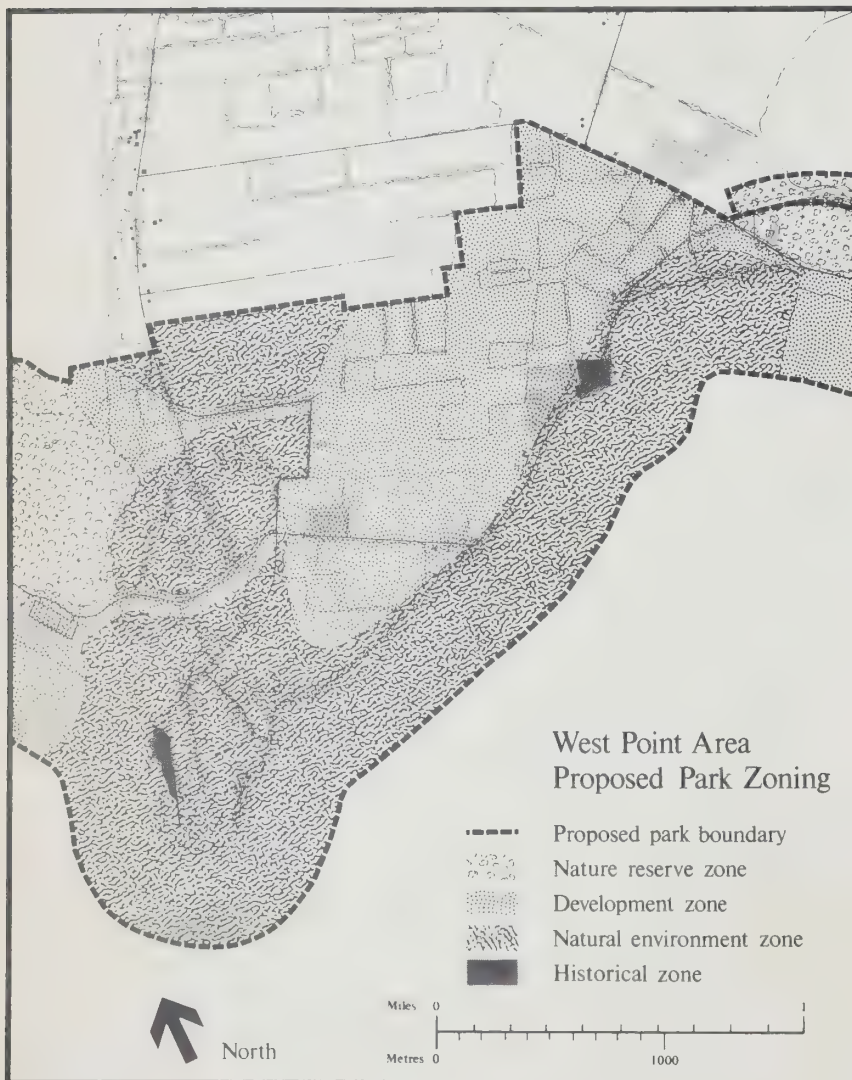


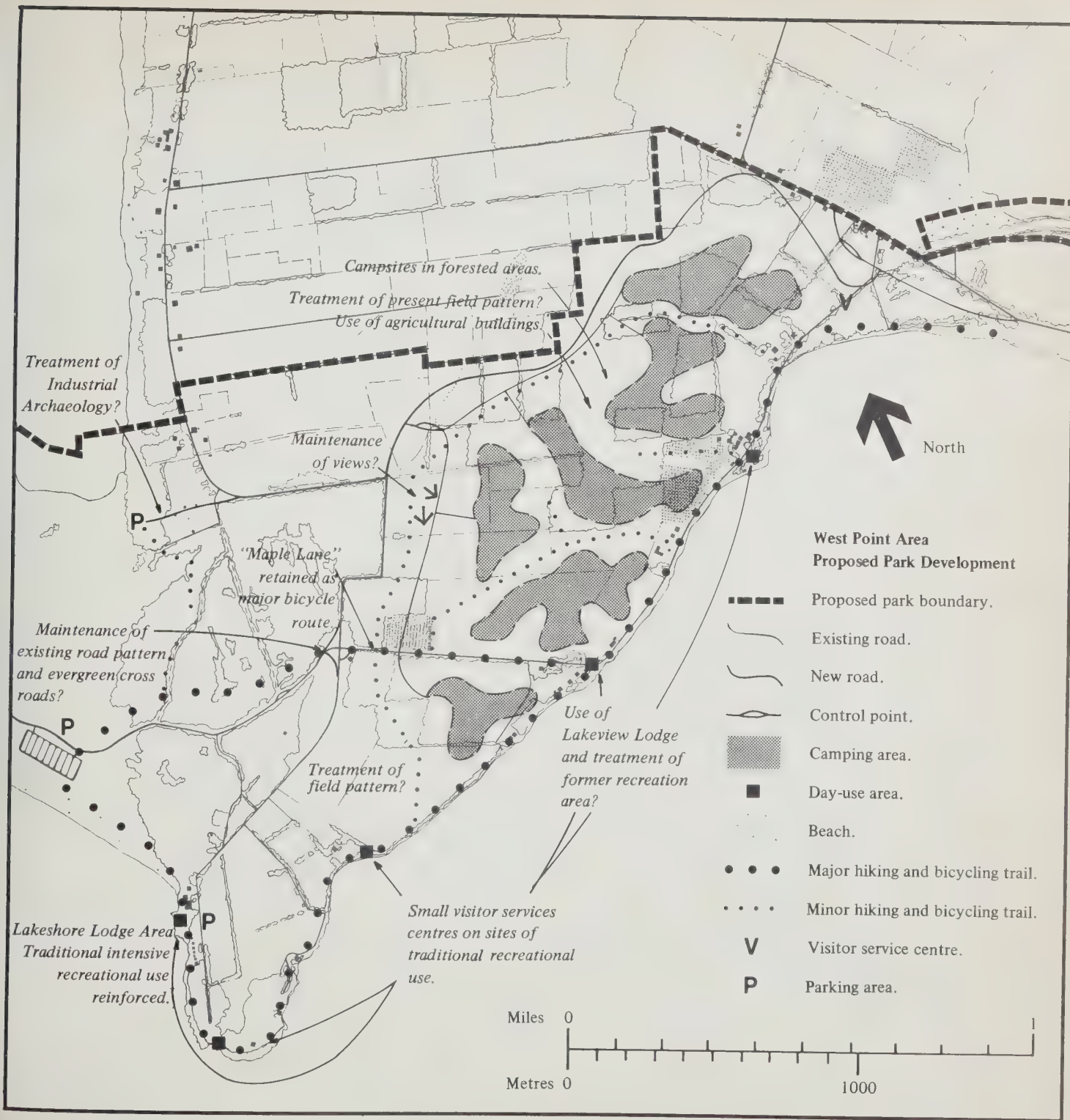
Treating heritage resources here as isolated incidents in a predominantly natural area — the traditional approach for provincial parks — would be to deny the reality of the considerable agricultural landscape in and around the park. Heritage resources at Sandbanks were represented best not as individual sites,

but as interrelated elements of the overall West Point area landscape. Although this landscape was and remains substantially man-made in appearance, with a few notable exceptions like the Lakeshore Lodge, individual landscape elements could not be judged to be of provincial historical significance. Moreover, the park was to be expanded primarily to conserve the natural sand dunes, and to protect them from excessive recreational use; if the central, predominantly man-made portion of the park were to be protected, then values other than provincial historical significance would have to be found for the heritage resources there.

Under the Historical Systems Plan as under any traditional approach to historical research, the study of a particular park area began with an examination of general published histories and became more specific as the researcher progressed to primary and unpublished materials. In a sense, the preparatory work was undertaken in the library, and the field work in the archives. This was appropriate to a strict historical approach to assessing cultural landscape. Eventually, specific cultural resources would be examined in the field, but not before a carefully documented history of the park area had been assembled. The field examination was in essence a process of confirming the existence and general condition of those man-made features whose historical significance already had been established. This regime was reflected in the final research report made available to the park master planning team — the history portion of the study would occupy two hundred or more pages, with about ten or twenty pages given over to information on provincially significant elements of the cultural landscape.

At Sandbanks we determined to take a different approach. With the master plan for the park nearing completion, and an awareness that a historical research-oriented approach could contribute very little









at this stage, we decided to conduct the description and assessment of the cultural landscape and its elements by going directly to the resources themselves.

## 1. Preparatory Work

The description and assessment of cultural landscape at Sandbanks began with the attempt to get an overview of the park environment that had been created by man. The chief tool in this effort was the vertical aerial photograph, which was blown up to a large scale and from which a base map was prepared. On this map were traced the outline of all large-scale man-made features: major buildings, roads, fences and tree lines, field patterns and wood lots, parking lots, beaches, and other identifiable single-use areas.<sup>3 7</sup>

A bibliography of published and unpublished sources on the park area was assembled, and from an expeditious review of this material, an historical outline was prepared. This outline established in general terms when historical man first occupied the area, the particular types of land use practised there, and the periods of most intense activity for each form of land use. Brief notes were made on the landscape features associated with the types of land use that characterized the history of the park area.

Finally, historical maps and photographs were examined for clues to the existence of man-made features that had not been apparent in the aerial photograph. These were traced in broken outline on the base map.

## 2. Field Work




Field work at Sandbanks was comprehensive: *all* buildings and large man-made features were examined in the field. The relatively small size of the park and the excellent access to the area made this

practical, although these advantages were offset by the very large number of structures that had to be recorded. For each, a field form was used to prepare a permanent record. The form was begun in rough in the field, then completed later when the results of analysis of the landscape features were available. Information recorded on the form was both concise and comprehensive — a ready reference for the planner who needed a wide range of basic facts about individual cultural features.

Field work also involved gathering information through interviews with local people, and examining unpublished documents and other sources of information that might be available locally.

A critical aspect of field work, of course, was photography. All man-made elements were precisely recorded with photographs, including particular views of the landscape, at the time the field forms were used in the recording of individual structures. The nature of other required photographs was determined in the main by the results of the analysis of the preliminary information gathered in the field, which revealed the views and relationships of man-made features in the landscape that had to be recorded.

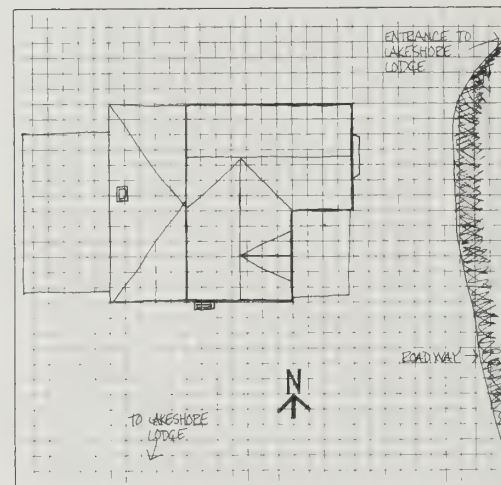
Both the preparatory work and the field work methods used at Sandbanks were typical of any site survey. They involved a much different approach, however, from that which had been used in the Historical Systems Plan. Significantly, no pre-selection of heritage resources was undertaken to limit field work. Instead, the goal of the preparatory work and field work was to identify the extent of the cultural landscape and its elements, and the nature of its built forms and spatial relationships. Together, these make up the physical context for much of the new park, and should determine the development proposals to be put forward in the master plan.

SANDBANKS PROVINCIAL PARK HERITAGE RESOURCE STUDY FEATURE RECORD FORM	
NAME: Carson Cottage	REFERENCE NUMBER: 6 DATE: June 8, 1978
PRESENT USE: Not in use	PRESENT OWNERSHIP: Mrs. H. Carson
STATEMENT OF SIGNIFICANCE: Earliest extant house in Sandbanks area (1879) constructed in 1879. Built by Daniel Macdonald, second owner of Lakeshore Lodge (1876-1905). Best example in this area of Victorian cottage architecture.	
	
	
	
DESIGNATIONS - PRELIMINARY MASTER PLAN (1977)	
NAME: Not identified	COMMENTS: Requires designation within Historical Zone
LANDSCAPE UNIT: J-West Point Area	
DEVELOPMENT POTENTIAL: Low	
ZONING: Natural Environment	
SUMMARY DESCRIPTION: Located centrally north of Lakeshore Lodge. In 1879, this house was used as a summer residence by Daniel Macdonald. It is a substantial dwelling indicative of Macdonald's wealth and standing in the community. It is also an early example of the	

12

recreation "second home".

When his house near the Evergreen House Hotel burned in the early 1920s, William Hyatt, a fisherman, bought the Carson cottage and used it as a permanent residence.



12. An example of the field form used in the 1978 study.

13. The human imprint on the landscape was recorded down to its most subtle manifestations, like hedge-rows.



13

Continuity with change

### 3. Analysis

The purpose of the analysis of information gathered in the preparatory and field work stages was to identify and provide a preliminary assessment of the cultural landscape and its elements.

#### i) A History of Land Use

The first stage in the process of analysis of the data collected at Sandbanks was to produce a history of land use for the area. This was not a traditional history of significant events, but one which attempted to define and explain the changing relationships between man and habitat in the park area. It was this relationship that produced the landscape we find in the park today.

The history of land use at Sandbanks was organized in themes similar to those outlined in *A topical organization of Ontario history*. This was used only as a guide, however. An attempt was made to simplify the themes so that they corresponded in general terms to modern categories of land use. In many cases, of course, this was not possible where the historical activity such as the fur trade or forest industry had long since ceased. Nevertheless, it was possible to explain the transition from these activities to the more intensive uses of the park area's resources by agriculture and industry that are familiar to us today. In addition to the usual categories of land use (which at Sandbanks also included the fishery, recreation, conservation, transportation, institutional, and commercial uses), emphasis was placed on a theme that explained the process by which the land was first alienated for settlement purposes. Altogether, these themes provided a profile of the historical developments that gradually produced the landscape at Sandbanks today.

Each theme was mapped to identify the areas within the park where the most intensive historical activity occurred. In addition, the general landscape characteristics associated with the theme were indicated on the map. For areas of intensive use associated with a particular theme, a plan was drawn to indicate the physical elements associated with the activity, and their spatial relationships to each other.

The value of producing a history of a park area in this form is three-fold. Firstly, it ties past activity directly to physical resources, such as distinctive landscape features or particular building types. Secondly, it reveals the history of an area not as a disconnected listing of "significant events" but in terms of the gradual development of land uses that have evolved one into the other through time and into the present day. Finally, the impacts of man on his habitat and, in turn, of the physical environment on him, are made clear to us. We learn through the study of past land use of the need to work with our habitat and to take advantage of the ways it can support us, without thoughtless exploitation of the physical environment.

At Sandbanks, the consequences of unwitting or ill-conceived use of natural resources are graphically illustrated in the history of land use. When local farmers removed the trees abutting the sand dunes on what is now the west side of the park, they removed the buffer between their lands and the shifting sands. Through the last half of the nineteenth century and until the 1920's, these sands moved unimpeded across the agricultural lands, burying farm buildings, a tourist lodge, and the roadway that lay in their path. Early conservation efforts finally arrested the movements of the sands, and brought to the area a heightened awareness of the necessity for balance between man and the natural





14. Lakeview Lodge, built as a farmhouse and expanded to serve as a resort early this century.

15. In front of Lakeshore Lodge, near the turn of the century.

environment. The establishment of the provincial park today can be seen as a continuation of the first conservation efforts.<sup>38</sup>

The history of land use at Sandbanks also reveals the degree to which the area has been able to sustain multiple uses. Local farmers have successfully combined agriculture, the fishery and intensive recreation and commercial activities with remarkable facility. In many instances in the past, residential, recreational and agricultural uses have occurred simultaneously and in close proximity to each other, sometimes making joint use of an area and buildings. For planners who are, perhaps, too conscious of "non-conforming uses" and the need to separate different forms of activities, this common historical pattern of integrated land use provides a valuable lesson.

## ii) The Cultural Landscape and its Elements

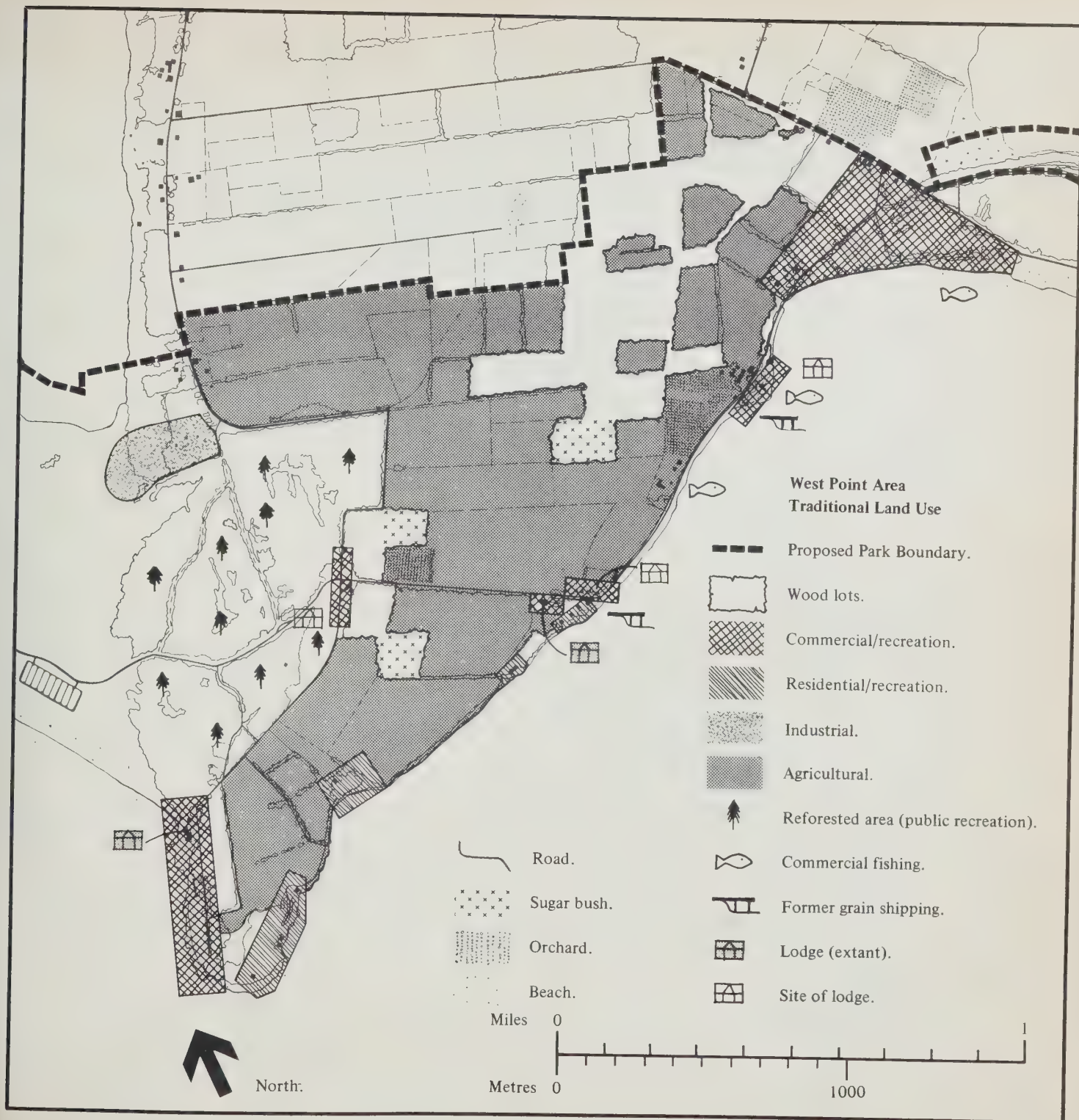
14

A basic description of the cultural landscape of the West Point area was undertaken. This involved the identification and mapping of the historical elements of the present landscape. Each were described, their historical development outlined, their past uses identified, and their present function and relationships in landscape identified. *Townsend traces*, a study of cultural landscape in Townsend and Walpole Townships in southwestern Ontario conducted by the Historical Planning and Research Branch, provided a useful guide for this exercise.<sup>39</sup>

## iii) Environmental Analysis

The study of past land uses and associated elements of the cultural landscape at Sandbanks was intended primarily to contribute to the "Environmental Analysis" stage in the park master planning process. At this stage in the planning, a synthesis of all available information on the resources is undertaken to determine "the suitability, capability, and feasibility

15









of specific site units for various categories of use and intensity of development”<sup>40</sup>

In practice to date, this has meant that cultural resources have been ignored in the environmental analysis because they have not been included themselves as elements of the environment. At Sandbanks, however, it was possible to show how site units could contain both natural and man-made environmental elements. Cultural resources were therefore placed in a context where their use and development potential could be discussed and values beyond their status as historical artifacts could be considered.

#### iv) Comparison of Traditional and Proposed Uses

The first of these values – the usefulness of cultural resources – was analyzed at Sandbanks. This was accomplished in two ways. Firstly, the general condition of all structures was assessed, and their current uses identified. A cursory comparison of the existing built environment with potential park needs was made. As park development proceeds at Sandbanks, it is proposed to construct new buildings for visitor services centres, interpretive facilities, residences, administrative offices, and general park services such as water, electrical, telephone, fire protection, emergency and sanitation services. The comparison revealed that many existing buildings appeared to have great potential for adaptation to park uses, making it unnecessary to erect new structures. A management plan, to follow the park master plan, will consider this question in detail.<sup>41</sup>

Similarly, a comparison of traditional land uses with proposed park uses revealed several important ways in which they complemented one another. Traditional recreation areas, for example, were readily adaptable to recreation uses in the new park, while the old road system in the area could be maintained as part of the park's circulation system. Site planning



to follow the master plan will explore in detail these correspondences between traditional and proposed park uses.

18. Maple Lane, running west from Lakeview Lodge.

#### v) Visual Analysis

Finally, the value of the design principles incorporated in cultural property at Sandbanks was explored. This was accomplished through a visual analysis of the park's cultural landscapes. Using concepts developed by the respected American planner Kevin Lynch,<sup>42</sup> it was possible to study the contribution man-made elements made to the high scenic and visual qualities of the park. A map of these qualities of the park was prepared, and compared with a map of the park's cultural landscape with its different elements identified. For example, old fence lines, hedgerows, tree lines and wood lots are man-made elements of the cultural landscape with the powerful visual impact of edges. As individual elements

they possessed little significance, and certainly almost no historical importance. But as part of the cultural landscape their value was considerable, for they made a major contribution to the special visual quality of the park area.<sup>43</sup>

#### 4. Application to the Master Plan

The description and assessment of the cultural landscape at Sandbanks Provincial Park was designed to establish a broader range of values for heritage resources, and to express these values in a manner that was highly accessible to the master planning team. The general emphasis, therefore, was on the interrelationships of man-made features amongst themselves and with the other elements of the park environment, rather than on the traditional approach which attempts to single out individual heritage resources.

This method produced information that can be applied at all levels of the master planning process. In the past, research reports prepared under the Historical Systems Plan often were classified as "background information" in support of the preservation of special areas within a park. At Sandbanks, however, the description and assessment of the cultural landscape has produced information that can be used in the formation of goals and objectives for the park, the development of the park's zoning system, and in the preparation of management, interpretation, administration, and visitor services plans.

Classified as a Natural Environment park, Sandbanks Provincial Park could be developed in such a way that man-made elements are progressively eliminated in the attempt to restore the central area of the park to a desired condition of natural beauty. Following a pattern that has occurred in the development of other provincial parks, buildings could be removed

as they are abandoned by their former owners whose property is expropriated. Agricultural fields could be colonized with forest plants and selective plantings of large trees could be used to soften the edges of woodlots and other tree lines to produce a more "natural" appearance. Similarly, park roads and trails could be developed that acknowledge only natural landscape features and the contours of the land, and so ignore the straight lines and sometimes abrupt alignment changes in existing road and field patterns that are still based on the original survey grid.

The loss of man-made elements and the failure to use principles of design drawn from the pattern of the existing cultural landscape would eliminate one of the most important qualities of Sandbanks as a Natural Environment park. This is the lesson past experience at Sandbanks can teach us about the need to find a balanced relationship between man and habitat in this part of Ontario. The shape of the agricultural landscape at Sandbanks is eloquent testimony to the limits man has had to acknowledge in his exploitation of the natural environment.

In the history of past land use at Sandbanks, we have seen how man was forced to abandon attempts to occupy the sand dunes and to confine his intensive activities to the central, West Point, area of what is now the park. As a result, this area has had to support a rich variety of land uses. Today, in the establishment of Sandbanks Provincial Park, we see this pattern repeated. Existing park facilities on or near the sand dunes to the west and east of West Point are being removed and reestablished in this central area, the traditional focus for development. The protection of the sand dunes is dependent on the new park offering a wide variety of recreational opportunities in this central area. This requires planning for open space that does not rely on tired formulas for maintaining man-made approximations

of nature and confining development to a narrow range of single-use reserved areas.

The "openness" of open space is not so much a matter of how few buildings stand upon it but rather of how open it is to the freely chosen activities of its users. Openness is a product of physical character but also of access, ownership, management and of the rules and expectations that govern activity. An open area need not be a natural one, in the sense of being untouched by man (there are very few of these anyway), and indeed in special cases the open space might be heavily occupied by man-made structures or even be a large interior volume. This is a behavioural definition: a space is open if it allows people to act freely within it.<sup>42</sup>

At Sandbanks, unless all the qualities of openness that characterize the cultural landscape in the West Point area are utilized fully in new development, the preservation of the sand dunes will be jeopardized. This is the basic lesson that history has to teach us about the area, and the chief problem that park planners and managers must confront in the new park.

## Conclusions

The description and assessment of the cultural landscape and its elements at Sandbanks proved to be a useful exercise in exploring new values for heritage resources in provincial parks. The chief lesson derived from the exercise is that a park must be treated as a single environment in which the man-made and natural elements of landscape have value and meaning as part of an organized whole.

Unfortunately, the protection and management of the park landscape is dependent on a system of zoning. Present park zoning stresses the diversity of a park's resources, and in the process segregates them into separate groups — "historical resources" (Historical Zones) and "earth and life science features" (Nature Reserve Zones) — or into broad landscape categories — "aesthetic landscapes" (Natural Environment Zones) and "wilderness landscapes" (Wilderness Zones). Two other zones (Access Zones and Development Zones) are organized in terms of the particular uses permitted within them.<sup>45</sup> The separateness of each zone is emphasized by its carefully delineated physical boundaries and by a prescribed set of distinct "permitted uses".

Zoning has many limitations for cultural landscape management. It is too broad, too blunt-edged a tool to be applied effectively to heritage resources, which are created through a subtle and sophisticated process that encompasses all the vagaries of man, his habitat, and time. Historical Zones, as we have seen, often have the effect of isolating heritage resources by ignoring their relationships to other landscape features. Perhaps the only value that is securely protected in an Historical Zone is the provincial significance of a particular heritage resource. The other values of heritage resources are expressed primarily in physical relationships that cannot be restricted to one zoning category. At Sandbanks, for example, the history of land use reveals that land uses have occurred not as single activities but as associations of these. To ensure that this variety and richness in the use of land is maintained, the present zoning structure applied to provincial parks will have to be weakened considerably. In addition, the usefulness of particular elements of the cultural landscape might be best exploited not in Historical Zones, but in Development or Access Zones within the park. While there is nothing about either of these



zones that would preclude the use of cultural features, the tendency to assign particular resources to specific zoning categories often results in the value of cultural features being overlooked in park areas other than in Historical Zones. Moreover, because cultural property is most often best represented in a landscape pattern, a zoning system is usually too specific to encompass an entire area of heritage importance. A landscape in a park, particularly when it is defined in visual terms, may be of consistent character yet contain resource elements appropriate to several different kinds of zones. The protection and management of landscape may consequently occur in a fragmented and uneven manner. This can result in the loss of a distinct landscape character, particularly when that landscape is predominantly man-made, and its visual qualities are determined by *land cover* as much as *land form*.

It can be seen that a major problem for heritage conservation in provincial parks, directly related to the question of zoning, concerns the uses permitted in a park, and the exclusion of private ownership from provincial parks. Many elements of the cultural landscape of important heritage value in a provincial park are lost when the former private property owners are removed and severe restrictions are imposed on land use. Man's use of the land creates landscape — remove that use and the landscape changes. If it is desirable to retain landscape character, then traditional uses must be retained in some form, albeit modified to meet the need for new development. For instance, some fields ought to remain in agricultural use. Removing the former landowners, however, usually spells the end for traditional land use. Ironically, this occurs in large part because of a reluctance to violate private property rights. Rather than impose strict controls on the property of an individual to ensure certain values are retained, the government purchases the property outright. As we in the heritage conservation field have learned, there are serious limitations to this

technique, and so it is used only as a last resort in the conservation of cultural features. At a time when there is increasing pressure on government to show more flexibility in its parks policy so that it does not conflict with the interests of the private sector, it may be advantageous to explore other means of landscape conservation for parks that include multiple use zoning, private leasing, conservation easements, or management agreements.

The management of open space must be flexible and incorporate a variety of approaches in order to meet the recreational needs of park users, and to ensure the conservation of the park environment. It may be that the present provincial parks system relies too heavily on government ownership as a technique for conservation, particularly in a time when the ability of government to expand its ownership role is severely restricted by rising costs and perceptions of prevailing public opinion. Similarly, as increasing pressure is put on the existing parks system, the present zoning system and private leaseholder policy may have to expand to incorporate a broader range of uses. This will permit the use on public lands of a variety of heritage conservation approaches that at present are restricted to private property.

At the same time, we in the heritage conservation field have to have a realistic view of what can be achieved in the provincial parks system. The conservation of cultural landscapes and their elements is certainly possible outside provincial parks. While we are able to assert a broader range of values for cultural landscapes in provincial parks, we must also learn to accept that there will be significant alterations to an area subjected to park development.

In asserting a broader range of values for cultural landscapes in provincial parks, we in the heritage conservation field have to learn to accept the great changes that accompany park development. Park planners often have been reluctant to incor-

porate cultural landscape features in park development plans because many heritage conservationists have taken a strict view that everything of heritage value should be retained. We must learn to make choices about what in the landscape we will retain from our past, and accept that much of what man creates becomes obsolete and must be replaced.

It is also important to recognize that a park is not simply a device to protect the *status quo* in a given area, but is itself a new development and an instrument of change. A park is created in the attempt to manage an environment, with explicit objectives in mind, in a better way than that terrain has been managed before. This often demands a change in land use and the alteration of the pattern and form of landscape elements. For example, at Sandbanks, past recreation, residential and intensive agricultural development was concentrated along the shoreline of the West Point area. For park planners to repeat this pattern would be a serious mistake, ignoring the lessons learned about the need to concentrate permanent development in the interior of a park and provide gradational access to sensitive areas like the shorelines of the West Point area. Placing new park development in many of the traditional development areas at Sandbanks would be to repeat the mistakes of our predecessors there, whose activities had reduced the general qualities of the environment in both physical and visual terms through their concentration of land use activity at the water's edge.

Through a broad approach to the description and assessment of cultural landscape values in provincial parks, we can move confidently from management of the *status quo* to the management of change. A last example from Sandbanks can illustrate this statement. Regrettably, and for a multitude of reasons which reflect more uncertainty than anything else, Lakeshore Lodge has deteriorated beyond a point where rehabilitation to its former use and character are possible. The costs of refitting the



19. Lakeshore Lodge in 1980, derelict, awaiting an as yet unknown transformation.

20. Lakeshore Lodge in the 1890's. How is it possible to recapture the charm and comfort of its heyday?





21, 22, 23. The shore side of Lakeshore Lodge, as it appears today and as it might appear as the setting for an outdoor display of the architectural and archaeological treasures of the region, and a place for

open-air performances. This is only one of many potential transformations that could respect the historical and vernacular aura of the place while giving it new life and use.

building to another use in anything like its present form would seem to be prohibitive. A structure recognized by the Ontario Heritage Foundation as a rare survivor of an important part of provincial history, the Lodge would nevertheless fall to the wrecker if present park practice were followed blindly. Perhaps a commemorative plaque would survive it. If historical significance were the sole value of this building, then the plaque might be the appropriate management strategy. But both history and the users of the park would be badly served by it.

For, so long as even the ruin of the lodge and its family of surrounding structures last, there are other important values and potentials that remain. The use of the area for active recreational pursuits, a tradition for more than a century, will be continued in the new park. Indeed, as the new park brings about a revival of the recreation tradition on this site, we can envision the revival of many historical landscape elements that had fallen into disrepair since the lodge was abandoned a decade ago. The retention of parts of the lodge and its outbuildings and their use as visitor attractions and outdoor displays can ensure that these individual sites and their relationships in the plan of the area remain as foci for intensive recreational activity here. Similarly, through the presentation of selected architectural elements on the original sites, the landmark qualities of the lodge can be retained, as well as some heightened sense of its original form. In detailed site planning scheduled for the lodge and its environs, other design elements can be identified and accommodated in new development as conspicuous representatives of human history. The result will be that many of the values of the cultural landscape of the area in which the lodge now stands will be retained, to the great benefit of the users of the new park. And by this means, heritage conservation will have taken its appropriate role, ensuring a creative place for the past in the evolving park landscape.



1. Ronald L. Way, *Ontario Niagara Parks; a history*. Niagara Falls Parks Commission; 1946. pp. 241-69.
2. See: Ontario Ministry of Natural Resources. *Ontario Provincial Parks; planning and management policies*. Unpublished government document, 1978, p. H-1-1. (Hereinafter referred to as *Planning and management policies*.)
3. In 1972, *The Historical Parks Act* was passed to permit the designation of public lands in Ontario specifically for the protection and public use of heritage resources. This legislation applies to Huronia Historical Parks and Old Fort William. No further parks have been created under this statute.
4. See *Planning and management policies*, p. H-1-1; Ontario Ministry of Natural Resources. *Ontario Provincial Parks; a proposed policy*. Unpublished government document, 1977, pp. 8-13 (Hereinafter referred to as *Proposed policy*.); and, *The Provincial Parks Act (1970)*.
5. *Proposed policy*, p. 12.
6. Ontario Ministry of Natural Resources. *Pinery Provincial Park Master Plan*, 1971.
7. See, Ontario Ministry of Natural Resources. *Provincial Park master planning and public participation guidelines*. Unpublished government document, 1976, 1976, pp. 63-5. (Hereinafter referred to as *Park planning guidelines*.)
8. David Skene Melvin. *Unpublished research manuscript on file in the Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation, Toronto; an annotated bibliography*. In preparation. See, also, the Historical Planning and Research Branch's published *Archaeological Research Reports* and *Heritage Planning Studies* series.
9. Ontario Ministry of Natural Resources. *Statistics 1979*, pp. 45-8. (Hereinafter referred to as *Statistics*.)
10. *Planning management policies*, p. H-11-1.
11. Ontario Ministry of Natural Resources. *Ontario Provincial Parks Policy*. Published brochure, 1978.
12. *Policy and management policies*, p. H-11-1.
13. *Statistics 1970*, p. 45.
14. Ontario Ministry of Natural Resources. *Provincial Park and Park Reserve master planning status report*. Unpublished government document, December 31, 1979.
15. Data provided by Park Planning Section, Ministry of Natural Resources.
16. *Planning management policies*. See, for example, H-IV-1.
17. On "rule-of-thumb" planning, see, for example, Gordon Cullen, *The concise townscape*, (London: 1971), pp. 140 and *infra*.
18. These studies are on file with the Historical Planning and Research Branch, Ministry of Culture and Recreation. See: David Skene Melvin. *Unpublished research manuscripts on file in the*

*Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation, Toronto; an annotated bibliography.* In preparation.

19. Ontario Ministry of Natural Resources. *Algonquin Provincial Park Master*, 1974, p. 22.
20. Delays in implementing the Algonquin master plan have been a continuing concern of the Ontario Provincial Parks Council. See, for example, its *First Annual Report*, 1975, p. 14. "In our attempts to monitor the implementation of the Algonquin Park Master Plan, the Provincial Parks Council has been extremely disappointed and concerned over the fact that so little of the plan's directives have been initiated to date."
21. Gerald Killan, "Mowat and a Park Policy for Niagara Falls 1873-1887", *Ontario History*. Volume 70 (June 1978) pp. 115-136.
22. *Proposed policy*, pp. 6-8.
23. *Planning and management policies*, H-111-3.
24. Ontario Ministry of Natural Resources. *Ontario Provincial Parks; landscape and design principles and guidelines*, 1970, pp. 5-8 and *infra*.
25. In 1969-70, expenditures allocated to parks represented 21.81 per cent of the total budget for the Department of Lands and Forests (precursor of the Ministry of Natural Resources). This amount steadily increased until 1974-75, when 26.79 per cent of total Ministry of Natural Resources expenditures were applied to parks. In 1975-76, the amount of money allocated to parks was reduced markedly both in real terms and as a percentage of total Ministry of Natural Resources expenditures to 21.37 per cent, a result, in large part, of the transfer of budgets for Huronia Historical Parks, Old Fort William, and the Historical Planning and Research Branch to the newly-formed Ministry of Culture and Recreation. In 1976-77, monies allocated to Parks was increased, but as a percentage of total Ministry of Natural Resources expenditures dropped again to 19.85 per cent. See: Ontario Ministry of Natural Resources. *Annual Report of the Minister*, 1969-70 through 1976-77. (Comparative statistics after 1976-77 are not available.) It is also notable that the former Parks Division of the Ministry of Natural Resources, which contained three Branches in 1974, is today the Provincial Parks Branch within the Outdoor Recreation Group (which also contains the Fisheries and Wildlife Branches).
26. The Ontario Provincial Parks Council stated in its *Annual Report* for 1976: "Council is very concerned about the future administrative, financial and operational arrangements for Historical Parks now that the responsibility for planning these parks has been divided between the Ministry of Natural Resources and the Ministry of Culture and Recreation.", p. 7. On April 1, 1980, Parks Branch, Ministry of Natural Resources, added a Heritage Planner to its staff.
27. Ontario Provincial Parks Council, *Annual Report*, 1977, p. 9.
28. Ontario Ministry of Natural Resources. *Ontario Provincial Parks Policy*. Published brochure, 1978.
29. Ontario Ministry of Natural Resources. *Historical resources evaluation scheme*, Historical Systems Plan, Volume III. Unpublished government document, 1974; and, *Historical zones and*

historical areas. Unpublished government document, 1975.

30. Ontario Ministry of Natural Resources/Provincial Parks Council. *Algonquin Park Master Plan; first five year review 1979*.
31. *ibid.*, p. 58.
32. *Planning and management policies*, H.
33. *Planning and management policies*, H-III-7.
34. Ontario Ministry of Natural Resources. *A topical organization of Ontario history*, (Historical Systems Plan, Volume 1. Published government document, 1975, p. 2.
35. Ontario Ministry of Natural Resources. *Historical zones and historical areas*, (Historical Systems Plan). Unpublished government document 1974.
36. Many of the observations in this section are based on the work of Susan Algie, whose *Sandbanks Provincial Park; heritage resource study*, (unpublished government document, Ministry of Culture and Recreation, 1978), was conducted under the supervision of the author.
37. A useful guide in this exercise was a previously published government study by Joseph Bucovetsky and Michelle Greenwald, *Townsend Traces; heritage conservation in Townsend New Town*. (Toronto: Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation; 1977) pp. 11 and *infra*.
38. See: Walter M. Tovell, *The Sandbanks, Hallowell Township, Prince Edward County*. Toronto: Ministry of Natural Resources; 1972.
39. See note 37 (*supra*).
40. *Park planning guidelines*, pp. 64-5.
41. *Sandbanks Provincial Park Master Plan*, Ministry of Natural Resources, 1979, pp. 40-2 and *infra*.
42. Keven Lynch, *The Image of the City*, (Cambridge, Mass.: 1960). Lynch states: "It would be equally interesting to apply these methods to environments of different scale and function than cities: a building, for example, or a landscape; a transportation system, or a valley region."
43. Among the more useful additional sources consulted for this exercise were: R. Burton Litton, *et al. Water and landscape; an aesthetic overview of the role of water in the landscape* (Port Washington, N.Y.: 1974); Kevin Lynch, *Managing the sense of a region*, (Cambridge, Mass.: 1976); and, Ervin M. Zube, Robert O. Brush, and Julius Gy. Fabos, (eds.), *Landscape assessment; values, perceptions, and resources*, (Stroudsburg, Penn.: 1978).
44. Keven Lynch, *Site Planning*. 2nd Edition. (Cambridge, Mass.: 1971), p. 352.
45. *Proposed policy*, pp. 77-8.







# Niagara's Falls, Toronto's power

The value and conservation of a monumental  
hydro-electric generating station

Mark Fram

## TORONTO POWER GENERATING STATION

*Situated in Queen Victoria Niagara Falls Park, above the Horseshoe Falls. Formerly owned by Toronto Power Company. In operation 1906-07. Purchased by Commission, 1922. Water collected by wing dam conveyed to turbines from head works through steel penstocks. Tail-race tunnelled through solid rock, discharging under Niagara Falls. Net operating head, 135 ft.*

*Turbines--Seven 15,500 hp. four 13,000 hp. William Cramp, all Francis type, vertical shaft, 250 rpm. Total capacity, 160,500 hp.*

*Generators--Two 8,000 kva General Electric Company; two 8,000 kva, seven 10,000 kva Canadian General Electric Company, 3-phase, 25-cycles, 12 kv. direct connected to turbines. Total capacity, 102,000 kva.*

*Auxiliary Generators--Two 300 kw Canadian General Electric Company motor driven, 125 volts.*

*Exciters--Eleven 50 kw, 125 volts, direct connected to main generators.*

*Transformers--Three banks = nine 2,670 kva, 12 to 60 kv; two banks = six 6,000 kva, 12 to 60 kv; one bank = three 16,000 kva, Canadian General Electric Company, single-phase, 12 to 63.5 kv to operate 110 kv star connected. Total capacity 109,030 kva.*

*Turbines--Seven 15,500 hp. four 13,000 hp. William Cramp, all Francis type, vertical shaft, 250 rpm. Total capacity, 160,500 hp.*

Hydro-Electric Power Commission of Ontario, *Annual Report, 1944*, p. 335





## Introduction

Niagara Falls must surely be the world's most visited natural wonder. Yet, with the annual press of millions of visitors, very little of what now surrounds the Falls is indeed natural. Even the Falls themselves are, through considerable if subtle engineering, much less than they once were — most of the water that drains from the upper four Great Lakes is channelled to massive hydro-electric projects on both sides of the international border. Niagara Falls is more properly a cultural wonder, for man's hand has been at work everywhere, even beneath the cataracts themselves. For better or worse, the manipulations of the past two centuries are deeply ingrained into the surroundings of the Falls, and as time passes the human presence becomes more and more an essential part of the experience of the place.

The roar and spray of the Falls at close quarters is overpowering and awe-inspiring. Yet, after a few minutes of contemplating this grandeur, the eye inevitably moves on. We can be certain that most eyes rest, if for but a moment through the mist, on a large stone building that commands the rapids above the Falls, perched on the Canadian shore amidst the greenery of the surrounding parkland. This building is often inadvertently the backdrop to millions of family snapshots of the Falls. It may well be one of the most photographed buildings in the world. Upon closer approach, the building resolves itself into a large colonnaded and embellished descendant of the palaces and public buildings of Renaissance Italy, as transformed by the classical ideals of the French *École des Beaux-Arts*. Its nameplate proclaims it to have been built as the Electrical Development Company of Ontario, and upon very close inspection it is quite obviously an electrical generating station. Stately and imposing, it hardly seems closely related to its modern counterparts: huge unadorned boxes of steel and concrete. But

this is truly an industrial building. Moreover, the grandly impressive edifice is merely the tip of an iceberg, as it were, sitting atop an excavation, packed with machinery, fully three times as deep as the height of the power house above ground. The Electrical Development Company built this dignified monument, known more commonly as the Toronto Power Generating Station, between 1903 and 1913. Operated by Ontario Hydro since 1920, the plant generated electricity until 1974, when its venerable turbines and generators were finally judged to be too inefficient and troublesome. The station has lain dormant ever since, its huge interior spaces and considerable equipment gathering dust and its dramatic exterior continuing to provoke at a distance the curiosity and interest of millions of visitors each year.

In the course of an extensive study of the relationships between the activities of Ontario Hydro and the conservation of properties important to the province's cultural heritage<sup>1</sup>, the Toronto Power station called special attention to itself. With only minimal maintenance, the station's physical condition had deteriorated by 1978 to a point where Ontario Hydro had to consider spending a not negligible amount of money simply to stabilize the station's condition. Its rehabilitation to generate electricity was regarded as prohibitively expensive and ill-advised. The Niagara Parks Commission, which had granted the franchise for the station's construction seventy-five years before, became concerned at the prospect of having the dormant station become the Commission's responsibility under the terms of that franchise. Although it seemed that both Hydro and the Commission had some interest in seeing at least the power house retained, the matter of financial and administrative responsibility for such action remained an unresolved problem. There seemed a real possibility that the entire works would have to be demolished for lack of an alternative.

3. Manholes over the cable tunnel in Queen Victoria Park, power house in background, 1979.



The situation prompted the Chairman of the Commission to seek the advice of the Chairman of the Ontario Heritage Foundation, who in his turn put the matter to the staff of the Ministry of Culture and Recreation. The Historical Planning and Research Branch had been working closely with plan-

ning and property management personnel of Ontario Hydro, and had already identified the Toronto Power station as a resource deserving special consideration by virtue of its age, size, and dramatic location. The result of this preliminary investigation was a brief study: *Report on the historical background and current status of the Toronto Power Generating Station at Niagara Falls* (July 1978). The report suggested that the Commission, with the co-operation of Ontario Hydro, actively search out public and private proposals for new uses for the station. Although no such extensive search of that sort has taken place, one group, the Sanford Fleming Foundation, has begun studies since that time to examine the feasibility of rehabilitating the station for use as a museum of and research centre for engineering, specifically the history and technology of power development. That work has been supported by the Commission, by Ontario Hydro, and by the Ministry. For its part, Ontario Hydro has taken interim measures to better insulate and weatherproof the power house.

While the prospect for the station is certainly more hopeful at this writing than it was in July of 1978, a great deal must still be done to assure its conservation and appropriate revitalization. While there has since been some opportunity to explore and expand upon the matter of the station's significance, there remain extensive areas needing further research. Nevertheless, it is clear that the Toronto Power Generating Station both embodies an impressive heritage and offers a splendid potential as a cultural resource for the future. There is little doubt that the case for its conservation is a powerful one. This paper stresses two particular aspects of that case: the evaluation of the meaning and importance of the station as a cultural resource, and, for any new use of the station, the relation of new formal elements to the existing building.



## Historic context

The recorded history of human activity at Niagara Falls goes back over three centuries to its discovery by European explorers. However, the exploitation of the Falls as a tourist attraction and as an industrial location cannot be considered to have started until around the beginning of the nineteenth century, during the initial settlement of both sides of the international border marked by the Niagara River.

The Falls themselves had always been regarded as a great attraction for tourists. But their intensive development for commercial tourism began in earnest when they became accessible by railway after 1860. Thereafter came a period of commercial development so rapid and uncontrolled that even in the *laissez-faire* economic and political climate of the times, there came demands for the restoration of some of the original natural splendour of Niagara Falls and its vicinity.

These demands included those of the Canadian Governor-General, Lord Dufferin. But despite his prompting, the federal Parliament did not take any action, leaving the matter to the jurisdiction of the provincial government. Ontario demonstrated more sensitivity to the pressure for the Falls' protection by providing for federal action, and, when that action failed to materialize, by creating in 1885 the Queen Victoria Niagara Park Commission, the parent of today's Niagara Parks Commission.

The legislation gave to the Commission the tasks of securing land for public parks at certain scenic locations and of beautifying and maintaining these parks. But while the government had provided capital for this acquisition and development, it left the Commission to generate its own funds for park maintenance. The Commission seized upon the idea of building a scenic electric railway along the river's

edge, and in December 1891 awarded a franchise for its construction.

The railway quickly became a public and financial success. It then became apparent that the rapid improvement in technology would soon enable the generation of electricity in sufficient quantities to prompt much more ambitious schemes for the exploitation of the power potential of the Falls. The Commission, having had the potential revenues for water-power leases vested in it by the government, granted a monopoly to the Niagara Power Company of Buffalo in 1892 in exchange for a much-needed infusion of cash. But financial difficulties on the American company's part, and increasing pressure from the public and from other potential developers, led to the renegotiation in 1899 of a lease arrangement for a fixed amount of water. This opened the door for similar leases with the Ontario Power Company in 1902, and the Electrical Development Company in 1903. The Commission considered these developments to be highly beneficial, both in attracting new public interest in the Falls' vicinity and in providing substantial revenues for improvements to park properties.

Of the three companies developing on the Canadian side of the border, only the Electrical Development Company was controlled by Canadian capital. While Canadian financiers had developed hydro-electric and electric traction schemes in the Caribbean and in South America, this company represented the first major involvement of Canadian interests at Niagara. The company's scheme differed from the others in another way as well: it intended to transmit electricity to an existing market 80 miles away in Toronto, an almost unheard-of distance at the time. William Mackenzie, Henry Pellatt, and Frederic Nicholls formed a syndicate, negotiated a water-power lease with the Park Commissioners, and then established the Electrical Development Company to attract capital and build the development. While most of

1889

*... the Commissioners were engaged in the work of reconstruction and in beautifying the Park by removing unsightly structures, and by constructing roads, walks, bridges, etc., which would afford facilities to the public to view all the points of interest, many of which had been more or less inaccessible. No provision, however, had been made by the Government when creating the Commission, for the maintenance of the Park other than by allowing certain moderate tolls to be charged for passengers crossing the Dufferin Island bridges, etc., and in the Report of 1889 the following doleful paragraph appears:*

*The Commissioners, after carefully considering the question are forced to admit that even with improved conditions the source from which the revenues are now drawn will prove inadequate to meet the annual cost of maintaining the Park, exclusive of the payment of interest and sinking fund on the debentures.*

Frederic Nicholls, in *Empire Club Speeches* 1904-5, pp. 144-145



1891

After much consideration it was decided that the requisite revenue for a self-supporting park could only be raised by granting privileges, which while revenue-producing, would do a minimum of violence to the aims of its founders . . . The first resource hit upon was the building of an electric railway along the river. The scheme recommended itself as a source of revenue, as a necessary convenience for transporting visitors and as a means of overcoming the antagonism of the cab-men who had persistently opposed the interests of the park from its foundation.

Ontario's Niagara Parks,  
p. 37

1891

I have pleasant memories of the construction of this line. The Canadian General Electric Company, which was then in its infancy, was awarded the contract for the manufacture of the electrical apparatus. This was our first large contract, as electrical contracts went in those days, and I remember standing by the 200 H.P. generator at the time this line was publicly opened, proud to know that it was the largest generator which up to that time had been manufactured in Canada; and nothing will more clearly exemplify the march of progress in electrical science than to refer to the fact that, while in 1902 a 200 H.P. generator was the largest that had been built in this country, we are now building a number of 15,000 H.P. generators, which are the largest in the world, and which will generate power to be derived from the same Niagara River at the powerhouse of the Electrical Development Company.

Frederic Nicholls, *Empire Club Speeches*, 1904-5, pp. 145-146.



4. The power house at the completion of its second phase, 16 July 1914.

5. Main entrance, 1978.

the work required was to be underground, the agreement with the Commissioners specified in great detail that the appearance of the visible portions were to be approved by them to ensure compatibility and harmony with the park and the Falls.

The company hired E.J. Lennox, a noted Toronto architect, to design the power house itself as well as transformer stations just outside the park and in Toronto. His scheme for an "Italian Renaissance" building was approved by the Commission and construction began late in 1903. The development of the works, both under the ground and above, proceeded rapidly despite the problems inherent in such a large and innovative engineering project. The power house corner stone was laid in 1906; first power was delivered to Toronto early in 1907. There were two stages; approximately half of the construction was completed by 1907, but the company's financial difficulties and its early political struggles against an emerging movement for public control of hydro-electric development postponed further construction until 1911. The project was completed in 1913.

The construction and operation of the development proceeded against a background of intense political debate over the way in which the exploitation of hydro-electric power ought to proceed in Ontario. Resource development being a matter of provincial jurisdiction, the Ontario government was forced in the late nineteenth century to adopt policies for the exploitation of its natural resources that would satisfy private entrepreneurs as well as those who believed in strong government. With the introduction at the turn of the twentieth century of technology for the economical generation and transmission of large quantities of electricity, debate arose between those advocating public ownership of electrical energy and those supporting private power interests.

#### 1905

*Our development radically differs in many ways from any of the others on either side of the river. A novel feature is that all the works of the Company are practically constructed on what was previously the river bed... the room required has been wrested from the most turbulent part of the upper rapids at Tempest Point. To accomplish this it was a necessary preliminary to construction to unwater about twelve acres of the river and the doing of this called for much engineering skill...*

*Nor was the work preliminary to the excavation of the main tailrace tunnel less devoid of excitement and risk, which at one time amounted to heroism. The main tunnel, which is the largest tunnel in the world, is about 2,000 feet in length by about 33 feet in diameter in the rough... powerful pumps were set to work to keep the water down, but the task was beyond them, and the*

*water steadily rose until only a small space remained between it and the roof. If the rock at the mouth of the opening - which acted as a dam - could be removed, the water would immediately run out, but how to remove it was a puzzle...*

*Our Chief Engineer and two men, roped together like Alpine guides, started for the opening along the face of the cliff behind the Falls. At all times the spray was blinding in its intensity, and gusts of wind or compressed air would almost beat them to the ground, but they persevered until success crowned their efforts, having ventured such a distance behind the Falls as had never previously been accomplished. Here the difficulty was diagnosed, and subsequent trips were taken to place a huge quantity of dynamite where it would do the most good, and on one Saturday at near midnight the charge was electrically*

*exploded. Supreme effort met its just reward. I am glad to say the obstruction was removed...*

*Over the wheelpit will be the Generating Station or Power House. Its style of architecture on the outside will be Italian Renaissance, and its classical lines are a tribute to the skill of the Architect, Mr. E. J. Lennox... broad terraces, enhanced here and there with parapets and wide flights of steps, will be constructed, adding materially to the aesthetic appearance of the landscape at this point. A wide colonnade, supported by massive stone columns, graces the entire front of the structure, and from this colonnade visitors will be able to view, through large plate glass windows, the complete operation of the massive machinery within the building.*

Frederic Nicholls, *Empire Club Speeches*, 1904-5, pp. 159-163



1906

*It was decided to lay the corner stone of the new Power House Building on the 8th day of May 1906 and the General Manager was instructed to make the necessary arrangements, the chief stone to be laid by the Lieutenant-Governor of Ontario and two others by the President and Vice-President respectively and it was decided to have a special train with Luncheon at the Hospice.*

Electrical Development Company, *Minute Book I*, 24 April 1906

1906

*The President formally announced that the first Turbine (No. 4) had been put in successful operation at the Works and was working satisfactorily and that the Transmission Line, both circuits, had been tested out and that Power had been sent over the Line at 40,000 volts into the Toronto Transformer House and that on the 21st inst. the first Power was received and the Terminal Station lighted from Niagara at 5:28 p.m. in the presence of the President and Vice-President and several representatives from the companies interested.*

Electrical Development Company, *Minute Book I*, 23 November 1906



6



7

6. Entrance foyer with generating room to the left drafting office to the right, 1978; at least a half dozen different types and colours of marble line the walls and cover the floor.

7. Part of the generating room, 1978.



Leading the forces supporting public ownership was Adam Beck (later Sir Adam) and his Hydro-Electric Power Commission, established in 1906. The Electrical Development Company, part of the private monopoly of street railways and electricity supply in Toronto controlled by Mackenzie, Pellatt, and Nicholls, emerged as the most conspicuous of his adversaries among the private interests.

The debate centred on the rates charged to the ultimate consumers of electricity. Adam Beck asserted that a public utility could provide power at far more favourable rates. The private interests argued that



8. The first units have begun to produce electricity (16 February 1907), but the plant will not be completed until 1913.

his figures were inaccurate, and that a public utility would have to charge more than a private company for electricity. The political contest surrounding this question was intense and dramatic. Eventually at issue was Sir Adam's 1917 scheme for the largest generating station in the world at Queenston, which the Electrical Development Company claimed violated their agreement of 1903 with the Parks Commission. The First World War provoked a crisis over power supplies to munitions factories, and finally, in 1920, after almost two decades of struggling to gain political and corporate ascendancy, Beck forced William Mackenzie to sell control of his Toronto-based monopoly. In 1922, the Electrical Development Company formally passed into the Ontario Hydro system.

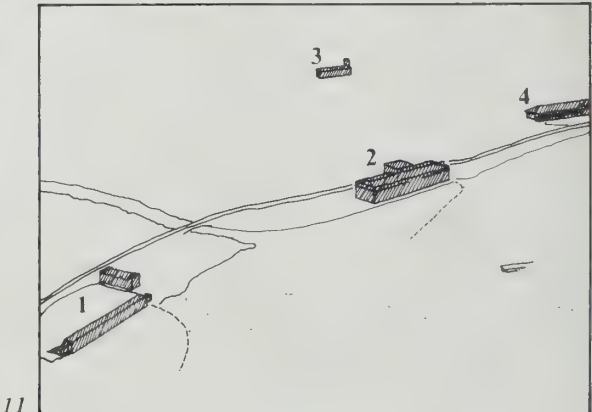
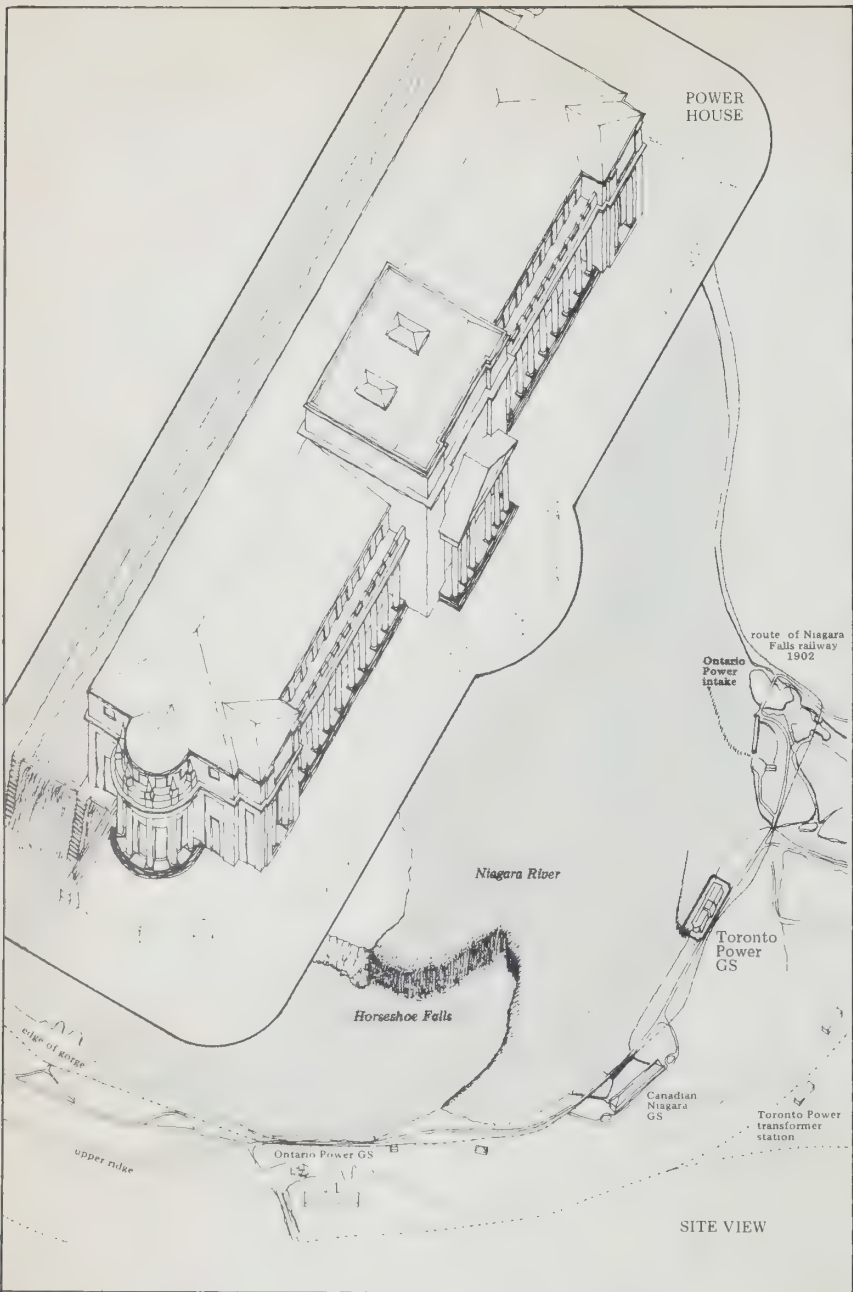
After that time, the station was operated by Ontario Hydro as the Toronto Power Generating Station, named after the consolidated holding company that had previously operated the plant. While almost all consumers now use electricity at a frequency of 60 Hz (cycles per second), the station produced 25 Hz electricity, now used only in older steel-making and electro-chemical equipment. With the decline in demand for 25 Hz power and the more efficient use of the same water for generation at Sir Adam Beck station in Queenston, Ontario Hydro decided against rehabilitating the station and closed it in 1974. Nevertheless, the water rentals for the station still provide a portion of the operating revenues of the Niagara Parks Commission.

1937

*The design of the powerhouse building in its classical proportions is striking and impressive. Built of Indiana Limestone, it is 462 feet long and 91 feet wide. A magnificent view of the rapids is obtained from the loggia at the northern end.*

*When the Ontario Power development and the Toronto Power development were constructed, they embodied the latest advances in the art of hydro-electric development. Homage must be paid to the men of vision and enterprise who planned these great plants at a time when the market for electrical energy was only in the earlier stages of the phenomenal growth which it has since manifested. Homage also should be paid to the engineers who designed and constructed these plants at a time when the art itself had many unsolved problems to face.*

Hydro-Electric Power Commission of Ontario, *Power Development on the Niagara River* (c.1937), p. 21



9. The power house and its locale; the dotted lines in the larger view indicate the outline of the former paved terrace; the faint line be-

tween the power house and the Horseshoe Falls in the other view indicates the tailrace tunnel.

10. Aerial view, 1980.

11. Key to photo 13.





12. Crest of the Falls with  
the new power house domi-  
nating the rapids, 1907.

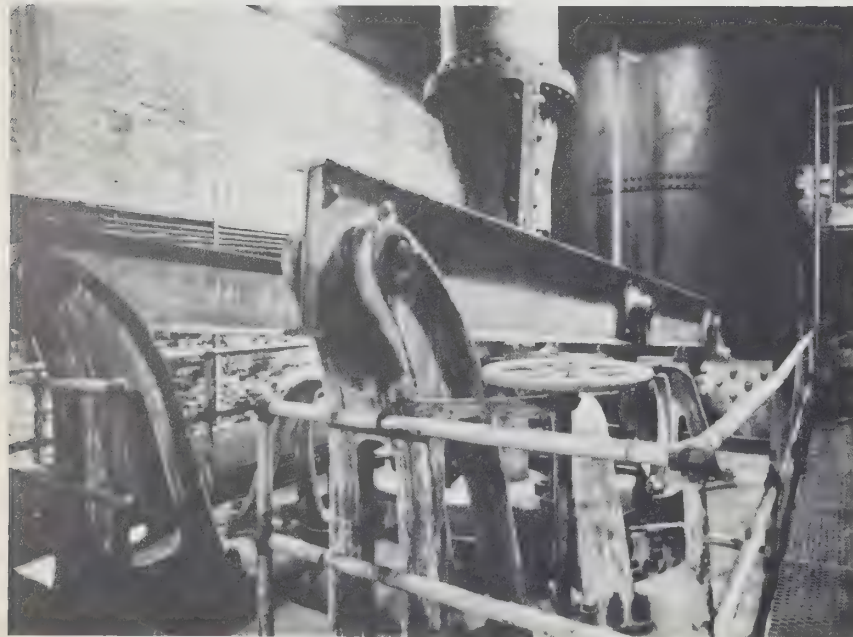
13. Aerial view, early  
1950's.





14

By any account, the Toronto Power Generating Station is an extraordinary place. Its location, appearance, function (albeit dormant), and historic associations entitle it to special consideration as a resource embodying and signifying important aspects of our cultural heritage. Because it is extraordinary, its evaluation should be far less difficult than that of a more commonplace feature, such as a residential neighbourhood, a country road, or a commercial building. The development of these more commonplace elements is harder to trace, their historic associations are less well documented, the comparability of one feature to another is often constrained by the lack of previous research and the potentially large numbers, and so on. But this generating station is quite obviously a special instance of a special type, built at a location exceptional for its scenic characteristics, historical associations, and public recognition, and built in an extraordinary political context during an era that witnessed the transformation of the region's economy from an essentially agricultural base to one of manufacturing.



15

14. The visible resource: the north end of the power house, 1978.

15. The hidden resource: gate mechanism for the first turbine, at the north end of the wheelpit, 1978.

The station has great significance; it is a cultural resource both important and meaningful. We have some idea already of why it is significant, and the text that follows aims to lay out more explicitly the reasons for its importance and meaningfulness. But if we are to regard this as a case study with some applicability to the situation of other properties (especially those of Ontario Hydro), then we must explore the mechanism of significance, that is, just how such a place as this acquires and retains cultural meaning and importance.

Now, this kind of exploration can become a quite complicated matter, and this brief demonstration does not intend to get too deeply drawn into it. What we must see are, firstly, how the several dif-

ferent facets of significance can be separated from the documentary material at hand and the physical evidence of the building itself; and, secondly, how these separate facets can be combined to provide us with the means to argue strongly for its conservation and even to demonstrate how that conservation might best be accomplished.

These facets of significance are in fact the quite basic questions that we must ask of a property of this nature in order to sort out the great variety of facts and opinions into somewhat coherent groups. In summary, but not in any special order, we can ask seven questions, whose responses (while they can and do overlap) will define for us both the outer limits of significance and its subdivisions<sup>2</sup>:

1. To whom is the resource important? (What individuals or groups have *cultural investments*, existing or potential, in the resource?)
2. For what purpose is the resource important? (Is the resource useful for scientific research, tourism, education, recreation, community pride, or some combination of these *modes*?)
3. How does the resource relate to the past, to memory? (Does the resource have specific *associations* in history and prehistory, and are these retrospective and nostalgic, representative and thematic, or exceptional and unparalleled?)
4. How does the resource compare with other resources? (Does the resource belong to a recognizable *material type*, and is it typical, prototypical, or atypical in relation to that type?)
5. How is the resource special in its locale? (What are the *vernacular* characteristics of the resource: the external relations of its site and public aspect, and the intrinsic quality of its form and construction?)

6. What potential cultural features lie hidden; (What are the *archaeological prospects*, and how might they relate to the other facets of significance?)
7. In how large an area is the importance of the resource felt? (What is the *scale* of its significance: international, national, provincial, regional, local, or some combination of these, in relation to its other facets?)

As it happens, one particular organization of replies to these questions suggests itself as most appropriate. The preliminary research on the station undertaken in 1978 identified six specific themes of history that emerge from the narrative we have just reviewed, and which are in the present context the answers to our third question, that of association. These themes are<sup>3</sup>:

1. the exploitation and preservation of Niagara Falls;
2. the development of Canadian capitalism;
3. the electrification of the city of Toronto;
4. the origin and development of Ontario Hydro;
5. innovations in electrical technology; and
6. the architectural expression of industrial ambition.

The concise tabulation in Table 1 shows the station's significance in terms of each facet, sorted out along the lines of these themes. As we shall see in the following elaboration, while each of the themes may have equivalent scholarly importance (albeit in different and possibly competing realms), some will lead far more directly and convincingly toward the conclusion that conservation is worthwhile and important. And some facets of significance will provide more support to that conclusion than will others.

Table 1

The exploitation and preservation  
of Niagara Falls

The development of  
Canadian capitalism

The electrification of  
the City of Toronto

The origin and development of  
Ontario Hydro

Innovations in electrical  
technology

The architectural expression  
of industrial ambition

**Cultural  
investment**

**Mode**

Niagara Parks  
Commission, local  
historical societies  
and museums, tourists,  
government of Ontario

Tourism  
Education  
Recreation  
Research

Scholars, business  
historians, Canadian  
General Electric and  
other companies

Community pride  
(special community)  
Education

City of Toronto,  
Toronto Historical  
Board, Toronto Transit  
Commission, Toronto  
Hydro, citizens of  
Toronto

Tourism  
Education  
Community pride  
(special community)

Ontario Hydro, local  
electrical utilities,  
special interest  
tourists

Tourism  
Education  
Community pride  
(special community)

Engineering profession,  
Sandford Fleming  
Foundation, Canadian  
General Electric and  
other suppliers, industrial  
archaeologists, special  
interest tourists

Research  
Education  
Community pride  
(several communities)  
Recreation  
Tourism

Architectural Conservancy,  
Niagara Falls and other  
LACAC's, scholars,  
architectural historians,  
special interest tourists,  
Toronto Historical  
Board, Ontario Heritage  
Foundation, Heritage  
Canada

Education  
Tourism  
Research



Associations	Material type	Vernacular	Archaeological prospects	Scale
Representative Exceptional	Typical Atypical	External relations	-there may be evidence of early milling activities on the site	International, national, provincial, local
Retrospective Exceptional	Atypical			National, regional
Exceptional	Prototypical			Provincial, regional
Exceptional	Atypical			Provincial, regional, local
Exceptional Representative	Typical Atypical	Intrinsic quality	-there may be concealed evidence relating to station construction and operation	International, national, provincial, regional
Retrospective Representative Exceptional	Typical Atypical	External relations Intrinsic quality		National, provincial, regional, local



16. Erecting a transmission line near Niagara Falls, 1907, probably to service an industrial tract on the Welland River owned by the Electrical Development Syndicate.

The outline above of historic context quite clearly revolves around the central story of the exploitation and preservation of the Falls and their vicinity. Certainly it is the Falls themselves that have determined the location at which these several strands of history have come together. It is quite possible that the generating stations on the Canadian side of the border would have looked a good deal different if the course of events establishing the Parks Commission and enabling its operation had been different.

As it was, the Parks Commission realized quite early in its existence that its continued survival and solvency depended on an assured income. And it was exceptionally fortunate for the Commission that developments in both electrical technology and the electrical manufacturing business came along when they did. The three major power developments — Canadian Niagara, Ontario Power, and Toronto Power — provided both the badly needed revenues for development and expansion of the park, and at the same time opportunities to regulate the appearance of major public attractions within the park. While this latter aspect is surely an early Canadian example of civic design review, not insignificant in the context of the City Beautiful and scientific planning movements at the turn of the century, it is more important for our purposes as a recognition that industry and public recreation were not in principle incompatible. Industry, properly clothed, could indeed be a considerable asset in such circumstances. One need only compare by 1910 the large scale and ordered appearance of the three power developments and park on the Canadian side to the chaotic development of numerous small plants with negligible public amenities on the American side (there was only one major installation — the Adams plant of 1895, at that date the world's largest, and the predecessor of the Canadian Niagara station).

The power stations not only provided the means for the continued existence and development of the Queen Victoria Niagara Falls Park, but they also demonstrated visibly and impressively to all who came that the Commission knew what it was doing.



The station is both typical and atypical in relation to others of its material type, that is, generating stations directly related to Niagara Falls. It is typical in that like the others it was designed to be publicly impressive and appropriate to the Parks Commission's vision of the park's development. In these terms, the choice of a style completely different from its predecessors is a mark of its typicality rather than its uniqueness — in order to achieve the same effect of impressiveness, it had to appear equally grand but different from the others. But it is also undoubtedly atypical as a hydro-electric power station with reference to a wider area, being far more self-consciously "stylish" (at least externally) and monumental than any other station in the province, and certainly at least on a par in this respect with any other station of its era in the world (there being prior to the 1920's few plants of this type and scale anywhere).

17. The parks at Niagara Falls in 1980. Almost all of the Canadian shore of the Niagara River between Lakes Erie and Ontario has been acquired by the Parks Commission with the revenues derived from water leases for electrical generation.

In terms of this theme, the Toronto Power station has both representative and exceptional associations. In the long term, the station is only one of several cases representing a similar course of events. A proposition to lease a part of the water rights vested in the Commission was made and considered, and an agreement for that exploitation negotiated. With agreement in hand, the entrepreneurs (in chronological order, the Canadian Niagara Power Company, the Ontario Power Company, the Electrical Development Company, and the Hydro-Electric Power Commission) proceeded to develop the scheme, subject to an approval by the Commission of the visible features and their compatibility with the park. Meanwhile, its water rentals enabled the Commission to continue its program of enhancing the surroundings of the Falls (and later the entire riverfront from Fort Erie to Niagara-on-the-Lake). But while the Electrical Development Company's Toronto Power station was neither the first nor largest of those schemes, it certainly involved specific exceptional associations to the theme of the Falls' preservation. Being third in line, the station had to be built on a more difficult site; squeezed in between the water intakes of the other two plants at the Falls, its construction involved de-watering a large area of the rapids. The construction of the power house on partly reclaimed land thus had, for the Commission, the happy effects of adding several acres to the growing public park, stabilizing a riverbank subject to rather turbulent erosion, and removing the remaining private properties below the Dufferin Islands. (However, among those private properties may have lain traces of the first Canadian user of Niagara's power, John Burch's mill of 1785).<sup>5</sup>



*All of the works and structures connected with the electrical power projects have been designed with the object not only of doing the least possible injury to scenic conditions, but the Commissioners are confident in the belief that when the several works are completed, the consensus of opinion by the vastly increased numbers of visitors that are expected to visit the Park will abundantly sustain them in their contention that the Park as a whole, with its wealth of electrical machinery, will then be of ten-fold greater interest to the majority visiting it, and in addition not only will the immediate locality beyond the Park be built up into one of the greatest manufacturing centres of the world, but the quickening impulse and vivifying effects of the world's latest and most perfect form of energy – created and sent forth by the Falls of Niagara – will be felt from end to end of the Province.*

QVNP, 17th Annual Report, 1902, cited in Ontario's Niagara Parks, p. 61

In vernacular, that is, place-related, terms, it is clearly the external relations of the Toronto Power station to the rapids and the Falls that provide most of its present-day impact. As the only building virtually unobscured by trees, the power house dominates the view of the riverbank upstream from the Table Rock observation area at the edge of the Falls. The view of the rear or river elevation and the north end bay, rather than that of the formal front elevation of the power house, is certainly likely the most seen by the vast majority of visitors to the Falls. These characteristics suggest that the face of the power house to the river, which was partly stripped of its detail almost thirty years ago as a consequence of facade deterioration, is an extremely important and well-recognized aspect of the station at the present time.

It is difficult to determine how good the archaeological prospects for the station and its immediate vicinity might be. There is no doubt that this site has accommodated several early industrial uses, and it was certainly a site known to native groups before the coming of European exploration. But the massive transformation of the site in the development of the generating station may not have left very many remains of earlier occupiers. Thus, what might be found on the site would be quite important in relation to the history of the Falls area, but it does not seem likely that much of this potential archaeological evidence survives.

The relation of this generating station to the history of the exploitation and preservation of the Falls would seem to be of importance to a number of groups. Certainly it has importance to the history of the Niagara Parks Commission, and one would hope to the present-day Commission itself. The station's historical role at the Falls should also be important to the several historical societies, museums, and committees in the Niagara Falls area, including the

Niagara Falls Heritage Foundation, not the least because there exists a good deal of documentary information with which an exceptional presentation could be made by these special groups to expand public appreciation of local history and surviving historic features. The station embodies an important episode in a political struggle lasting several decades both in the provincial Legislative Assembly and at the national level concerning the relation of public and private sectors in resource development. The station thus has importance to the history of the provincial government itself and, again one would hope, to the present-day government. Behind all these specific interests, there lies the general but powerful interest of the millions of tourists who visit the Falls annually. Many tourists travel considerable distances to reach Niagara Falls, and having made that journey undoubtedly consider it important to have the experience of viewing the Falls supported by the widest possible range of attractions based on the Falls themselves in order to consider the trip worthwhile. Thus the everyday visitor to Niagara Falls would seem to have a considerable if latent interest in the potential attraction of the station and its relation to the story of the Falls.

Quite obviously, the usefulness of the Toronto Power Station as a heritage feature in this context is in terms of potential tourism, based in turn on the educational and recreational opportunities the site presents. It has a small research potential for archaeology. Its scope has several levels, from the international implications of its tourist attraction and its location on the international boundary; its national role as a focus of debate on federal-provincial authority over boundary waters and resource development; its provincial role as a special manifestation of the early twentieth-century balance of public and private, political and financial interests; and its local role as a stately building overlooking Niagara Falls for the past seventy-five years.

1. For the purpose of generating electricity and pneumatic power or any other power to be transmitted, and capable of being transmitted, to places beyond the Park, the Commissioners hereby grant to the Syndicate subject to the consent and approval of the proper authority, and save as hereinafter limited, a license irrevocable to take from the waters of the Niagara River within the Park a sufficient quantity of water to develop 125,000 electrical, or pneumatic or other horse power for commercial use. Provided also that these presents are not to be construed as expressing or implying any covenants by the Commissioners for title or quiet possession . . .

6. The works hereinafter specified . . . shall before being commenced be submitted by the Syndicate to the Commissioners, accompanied by suitable plans, profiles, specifications and elevations as the case may require, and the scenic and general features thereof shall be approved by the Commissioners in writing. This approval . . . is intended to secure as far as possible a degree of harmony in outline and treatment compatible with the location and with the works in a public Park. The works to which such approval are required, and shall not be proceeded with without such approval, are the following:—

(a) The location of the temporary coffer dam required to shut out the waters of the river from the space to be occupied by the works of the Syndicate.

(b) The design and location of the overflow masonry dams and weirs, sheer ice booms, revetment walls, and piers for impounding and regulating the flow of water to the power house.

(c) The designs and location of the power house and wheel pit, including the works and structures for regulating the flow of water at the penstock inlets.

(d) The lines and levels for the filling of the grounds about the site of the power house and out into the river to the north thereof, and the method of protecting the same from erosion.

(e) The tunnel for carrying away the waste water from the wheel pit, the means of access to the mouth of the tunnel below the Falls, the method to be used in disposing of the excavated rock, and the supply of timber and material for the lining of the tunnel.

(f) The design and location of the transformer house and the method of conducting the electricity to points without the Park . . .

19. The Syndicate undertake to begin the works hereby authorized within two years from the date of this agreement and to have proceeded so far with the said works on or before first January, 1907, that they will have completed within the Park, water connections (that is to say, head race, forebay, penstocks, and tail race) for the development of twenty-five thousand horse-power, and have actually ready for use, supply and transmission, ten thousand developed electrical or pneumatic horse-power by said last-mentioned day, and if not then completed the Lieutenant-Governor in Council may declare this agreement, the liberties, licenses, powers and authorities so granted and every of them to be forfeited and void, and thenceforth after such declaration the same shall cease and determine and be utterly void and of no effect whatever . . .

23. If the Syndicate should at any time or times after the completion of its plant and power house, or the first day of January, 1907, whichever shall first happen, continuously neglect, for the space of one year, effectually to generate electricity or pneumatic power as hereby agreed by the Syndicate, unless hindered by unavoidable accident, the Lieutenant-Governor in Council may then and from thenceforth declare this agreement, the liberties, licenses, powers and authorities thereby granted and every of them to be forfeited, and thenceforth the same shall cease and determine and be utterly void and of no effect whatever.

extracts from *Franchise from the Commissioners of the Queen Victoria Niagara Falls Park to the Syndicate* (Mackenzie, Pellatt, Nicholls), 29 January 1903.

1902

*Up to 1902 all of the privileges on the Canadian side were being operated by United States capital, and Canadians had no part in the development of their magnificent birthright. The Niagara Falls Park and River Railway had been promoted, constructed, and, for a short time, operated by a Canadian company, which finally sold out to the International Railway Company. The Canadian Niagara Power Company and the Ontario Power Company are both controlled by United States capital, and much credit is due to them for their foresight and enterprise in being the first to take advantage of this opportunity for the investment of capital.*

*In 1902, however, Mr. Wm. Mackenzie, Colonel H. M. Pellatt, and myself, made application for a site in the Park for the development of power on a large scale. Before this time the ability to transmit electrical energy for long distances at high voltages had not been commercially demonstrated, but as soon as it was known to be both feasible and successful, the question of generating power at Niagara Falls for transmission to Toronto became a live topic.*

Frederic Nicholls, *Empire Club Speeches*, 1904-5, pp. 148-149.

The first of the three major power developments on the Canadian side of Niagara Falls was begun in 1902, after several years of delay, by the Canadian Niagara Power Company, owned by a group of New York financiers who had completed the Adams power plant on the American side in 1895. The second project, also started in 1902, was the plant of the Ontario Power Company, a Buffalo-based American group. Hard on their heels came the first Canadian franchise, the syndicate of William Mackenzie, Henry Pellatt, and Frederic Nicholls. Their presence at the Falls was by no means the first Canadian-financed power project — all three had participated in electric light and traction schemes in South America and the Caribbean.

William Mackenzie was a railroad man, who eventually came to control, among others, the Toronto street railway system (which had been electrified by 1894). Sir Henry Pellatt was a successful and adventurous stockbroker and financier with experience in mining stocks and South American utilities, and the president of the Toronto Electric Light Company, the city's electricity supply monopoly. Frederic Nicholls was an electrical entrepreneur who turned to manufacturing in the 1890's, acquiring rights to Edison's incandescent light technology and eventually taking over Edison's Canadian operations to form Canadian General Electric in 1892. They combined their interests in the Electrical Development Company in order to supply their Toronto electricity and transportation interests with hydraulically-generated electricity and to stimulate further electrical demand in the pattern demonstrated by such American entrepreneurs as Thomas Edison and Samuel Insull.

But the company's path was by no means easy in its early days. Its initial capital was easily generated,

but the rising public power movement and apparent Tory sympathy with that movement put a damper on the marketing of private utility bonds in England in the crucial year of 1906 when the first generators began to operate. Despite the growing demand for electricity from the station, its securities sold poorly, and operating funds had to be borrowed from chartered banks. Finally, in a juggling of corporate connections, William Mackenzie first informally (by leasing the building to a newly-formed Toronto Power Company), and then formally brought the Electrical Development Company into his Toronto Railway Company and gave it access to the considerable profits of the street railway monopoly (which, after all, was the prime consumer of the station's electricity). The station was then brought to its full capacity between 1911 and 1913 to satisfy the steadily increasing Toronto demand. But local dissatisfaction with the poor railway service and allegedly high electricity rates in Toronto brought considerable pressure on the Toronto City Council to terminate Mackenzie's monopolistic franchises. Between 1911 and 1914, City Council moved to buy him out. The intervention of war delayed the takeover, and added additional pressure to the situation when the debate over the pricing of essential electricity supplies to munitions factories brought Adam Beck's Ontario Hydro into open battle with Mackenzie. The private utility monopolies in Toronto were finally taken over by the public between 1920 and 1922.<sup>6</sup>

The career of the syndicate and its Electrical Development Company is hardly representative of the general trends of Canadian capitalism at the time. Most Canadian capital was quite conservative, preferring to work with existing transportation and trading companies and making only limited ventures into such large-scale industrial entrepreneurship (although it must be admitted that supplying electricity to a monopoly in a large urban market at the



turn of the century involved far less risk than basic manufacturing). And most of the risk capital that Canadians *did* have went to work outside the country. The rising figures in Canadian financial circles preferred to take their risks in areas, for practical purposes including Canada itself, not already controlled by English and American interests. So they went to work in South America. Thus the Electrical Development Company was indeed exceptional and its generating station reflected that. But the station, clothed in a style coming into fashion for urban commercial buildings, especially for banks, also reflected contemporary capitalism in a more general and retrospective way. On the one hand, the power house evokes an exceptional association with the Electrical Development Company; on the other hand, it evokes a retrospective association with moneyed interests of the period.

In terms of its material type, the station is certainly atypical of privately developed generating plants in Canada. It was the first major domestically financed project, and its relation to the Toronto network of utility monopolies guarantees it special status in the region (although some features of an integrated supply and distribution monopoly can be found in Hamilton's private utilities beginning in 1898).

The groups for whom this aspect of the station's history has importance would seem to be quite limited and specialized. The company has long ago disappeared, but there is no doubt of a scholarly interest here on the part of business and economic historians. Because of its national associations, it may be of interest to the National Historic Sites and Monuments Board. Perhaps the most important non-academic group might be the surviving private sector participant in the electrical manufacturing industry, Canadian General Electric, which supplied equipment and expertise for the station. It was the first large scale Canadian installation; CGE's 15,000



horsepower generators were the world's largest at the time.

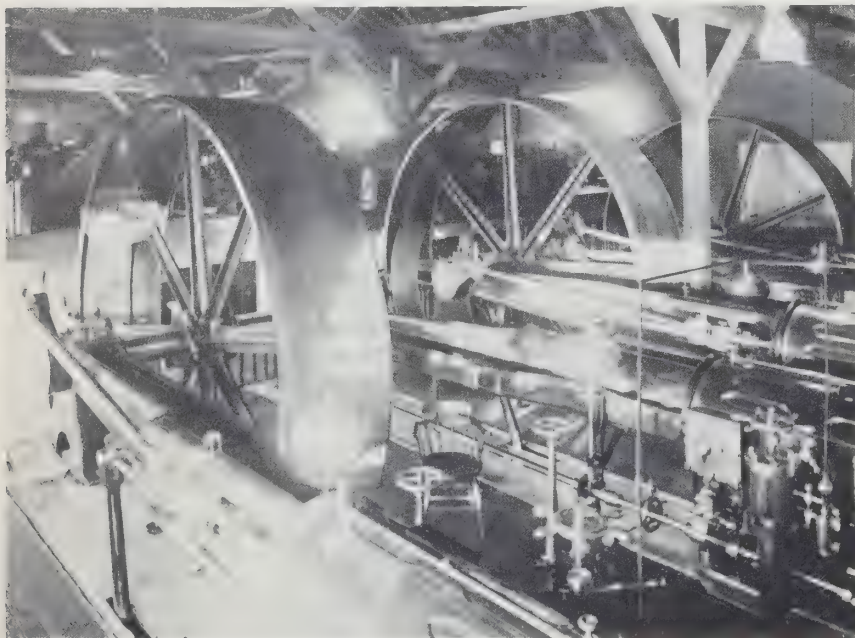
The mode of significance is correspondingly limited, apparently to the special community pride of the electrical industry and to a related educational purpose. The scale of this theme and its facets of significance is on one hand national and nationalistic, but perhaps more usefully considered to be regional, tied in to the geographic limits of the enterprise and its manufacturing suppliers, and to the stock and bond markets of Toronto.

18. Laying one of three cornerstones, 8 May 1906; Frederic Nicholls with trowel in hand, Resident Engineer Beverly R. Value in top hat, Consulting Engineer (and street railway promoter) F. S. Pearson in bowler standing behind Nicholls, and assorted officials and workmen.

## Toronto's electrification

The infant Toronto Electric Light Company first lit Toronto's streets and some of its major businesses and hotels with arc lights in 1883. As the company's secretary, Henry Pellatt guided the growth of the operation, which by 1890 illuminated all the major streets in the city from its newly built steam-powered plant at the foot of Scott Street. Another firm, the Toronto Incandescent Electric Light Company (under Frederic Nicholls), had acquired rights to Edison's incandescent light technology and began to serve the demand for interior lighting in 1889. About 1896, the two firms merged and expanded further, assured of continuing profitability by a 30-year monopoly for electrical supply acquired in 1889. But it became apparent that accelerating demand would outpace any additions to the steam generators — the plant almost doubled its size between 1901 and 1906 (and the company's earnings

19. Toronto Electric Light Company's Scott Street steam plant, around the turn of the century, eventually replaced by Niagara-generated electricity.



more than doubled in the same period). Newly proven technology made long distance high voltage transmission a practicable proposition, and at the turn of the century the Toronto electricity suppliers gazed longingly toward the immense potential eighty miles away at Niagara. The first experimental application of electricity to transportation in the country had been successfully installed at the Canadian National Exhibition in 1884, and the first trolley-pole system on the continent had been demonstrated the following year. William Mackenzie acquired a 30-year franchise for the city's street railways in 1891, and with those innovations satisfied the requirement that it be electrified by 1894. Apparently the Toronto Railway Company was exceptionally profitable, supporting its rapid expansion from its own revenues. A new generating plant became necessary in 1898, but it was soon loaded to capacity. Mackenzie was compelled by his company's success to join the others in exploring and then exploiting Niagara's potential.<sup>7</sup>

But the private utility monopolies came under fire from local politicians and the press for their rather high-handed methods of operation. To cite one example, the Toronto Electric Light Company had originally undertaken to put all its wires underground, but used instead the Incandescent Electric Light agreement that allowed overhead wires for all its subsequent installations — thus the persistence to this day of overhead wires in the city. As time passed, William Mackenzie's desire to retain his profits made him increasingly reluctant to spend money to expand the street railways, despite public demand. Because of the closely associated directorships of all these ostensibly separate companies, it seemed to the public as though a very small group of men was making several profits in producing, transmitting, and distributing electricity in a vertically-organized monopoly.



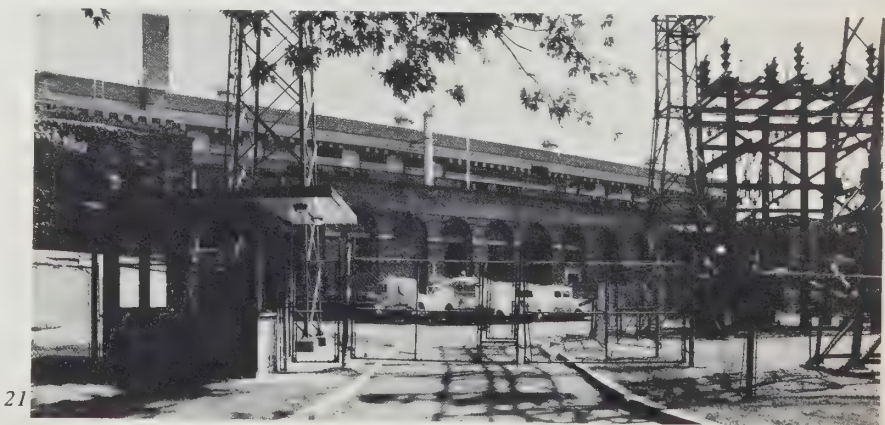
Public feeling was even more heated when the Electrical Development Company's Toronto Power station at Niagara Falls began to produce electricity — it seemed as if private interests were locking up for private profit what was regarded as a public resource. On one hand, local pressure for public control of Ontario's water powers led the Toronto council to join with other municipalities to campaign for co-operative municipal ownership of a low-cost electrical network (leading eventually to Ontario Hydro). On the other hand, the local pressure led to almost open battle between the city and the private utilities. Both sides hardened positions — the city pressed litigation to force the companies to comply with the politicians' wishes and tried to buy out the Electric Light Company, while the company campaigned in both federal and provincial assemblies against the public power interests, and continued to operate in their customarily overbearing style.<sup>8</sup>

Finally, with the support of the municipal co-operative established under the Hydro-Electric Power Commission in 1906, the city went into direct competition against the Toronto Electric Light Company with its own Niagara-generated power in 1911, and began to construct new street railway lines outside Mackenzie's system. Toronto Hydro, the local commission established to distribute public power in the city, apparently found its business quite profitable, and began almost immediately to apply its surplus to reducing rates, which dropped to well below half those of the private utility. The competition seemed to push rates down for all consumers to a point well below those for other centres such as Montreal, which continued to be dominated by private utilities. Toronto Hydro's commissioners, appointed by City Council and Ontario Hydro, were empowered to deal with all aspects of local operations on a relatively independent basis, hiring their own staff and conducting their own financial affairs. In the ultimate "Clean-Up Deal" of 1921, the private

electrical distribution system was incorporated into Toronto Hydro, and the street railways were amalgamated to form the Toronto Transit Commission.<sup>9</sup>

The Toronto Power Station's relation to this theme is certainly exceptional. It became an absolutely essential feature of the utility syndicate's operation. It is highly improbable, given the technology of the era and the financial capabilities of the entrepreneurs, that the monopolies would have been nearly so successful without the timely and crucial introduction of relatively cheap hydro-electric power (even given the expense of its initial development).

Toronto Power's Niagara Falls transformer station, 1906 (20), and its twin, the Davenport Road station in Toronto, now Ontario Hydro's Bridgman TS, 1979 (21).





Toronto interests regarded the Niagara connection as essential for their industrial growth.

In terms of material type, the station must be considered prototypical. It was the first hydro-electric station supplying Toronto, and preceded a network of several developments serving an integrated power grid for the city. It is the oldest surviving generating station for the city of Toronto; none of the earlier steam plants survives.

In this context, the groups for whom the Toronto Power station should have importance are certainly Toronto groups. Toronto Hydro, and the Toronto Transit Commission can trace their historic origins to this place; following on these interests, there may be some importance attached to the place by the Toronto Historical Board. Given the well known, if stormy, relations between the Toronto Council and the private utilities, Council itself may have some concern over the fate of the station. And there should be a small increment of additional interest for those visitors to Niagara Falls who happen to hail from Toronto. On the other hand, however, the traditional antipathy of other areas in Ontario to Toronto may affect how strongly such a Toronto connection is made.

Thus we find the usefulness of Toronto Power's relation to Toronto to lie in the realm of tourism and education, with a component of community pride (on the part of Toronto community, that is). Its scope for these purposes is primarily regional, extending along the transmission right-of-way to Toronto. But inasmuch as Toronto is the provincial capital, and as the Toronto struggles must be seen in the context of other local struggles between public and private utilities, there is a strong case for widening its scope to the provincial level.

## Ontario Hydro's origins

The movement for public electrical power seems to have started formally in 1902 during a series of Board of Trade meetings in Berlin (now Kitchener) and Waterloo. Local businessmen began to press for some guaranteed low-cost electrical supplies from Niagara to communities in southern Ontario from Brantford west to London. They were motivated by the now realizable potential of Niagara Falls power and the industrial growth it could promote in southwestern Ontario, and simultaneously pushed by the rising price of American coal and the prospects of having the private utilities in Hamilton and, worse, Toronto corner the available supplies of electricity from the Niagara area (not to mention the considerable electricity exports to the New York side). The Liberal provincial government was not especially sympathetic, and despite opposition by both the Berlin group and municipal representatives from Toronto to the Electrical Development Company's application, the government approved the Parks Commission's franchise agreement with the syndicate. Even before its conception and birth, the Toronto Power Station had become a focus in the debate between public and private utilities.

The loose organization of businessmen soon transformed itself into a more influential group of mayors in February 1903, and pressed demands for the construction of a co-operative transmission system connecting Niagara to their municipal electrical utilities. By the end of the year the government reluctantly agreed to establish a commission to investigate the prospect. Among its members was Adam Beck, mayor of London, and a Conservative member of the legislature. As the movement gathered momentum, the vacillating Liberals were defeated by the Conservatives in the Ontario election of 1905. Having supported (and in turn having been supported by) the public power movement, the new Conserva-

1920

*On the fifth of December the sensational announcement was made that Adam Beck and the Ontario Hydro had come to terms with Mackenzie and that the long war between them was at an end. The announcement represented the surrender to public ownership of the citadel of private power interests in Ontario. Private ownership could not compete with co-operative municipal ownership backed by the government of the Province when public ownership was as efficient and resourceful as the Beck-dominated Hydro. It was arranged that the purchase agreement should date from November 30, 1920, and that all adjustments should be made as of that date. The deal was to apply to the Electrical Development Company, the Toronto Power Company, the Toronto and Niagara Power Company, the Toronto Electric Light Company, the Metropolitan Railway, the Toronto and York Radial Company and the Schomberg and Aurora Railway. The price of \$32,734,000 was much higher than Adam Beck wished to pay. Nevertheless the submission of the powerful interests with*

tive government moved to empower Adam Beck to complete his own investigation. Its result was a permanent Hydro-Electric Power Commission (Ontario Hydro), under Beck's chairmanship, to regulate the municipal efforts and co-ordinate the development of a distribution system. This of course angered the Electrical Development Company, which led a press campaign against the public power legislation, alleging that the public power movement would scare off the English investors upon whom the province relied for capital financing. The battle thus began in earnest. Despite the attacks led by the Toronto monopolies, a number of municipalities passed bylaws enabling their participation in the venture. Special legislation had to be enacted to enable Toronto to establish its own municipal utility, since direct competition between public and private utilities had been proscribed by the 1899 Conmee amendments to *The Municipal Act*. By 1908, Ontario Hydro had contracted with the Ontario Power Company (which was far less embroiled in the emotional pitch of the debate) for the supply of electricity, and had begun construction of its transmission lines to Toronto and the southwest. Hydro power lit the streets of Berlin on 11 October 1910, and those of the other municipalities soon after. But despite government attempts to defuse the conflict, the Toronto Power Company continued to lead the campaign against Adam Beck and Ontario Hydro, even though William Mackenzie and the others had by this time climbed out of their financial difficulties.<sup>10</sup>

For his part, Adam Beck was no less a warrior, and after 1910 aggressively sold his electricity at the lowest possible rates to stimulate and diversify demand (and where possible at the expense of the Toronto Power Company). His network expanded rapidly. In 1914, Ontario Hydro began to acquire its own generating stations. With the outbreak of war, power demand for munitions factories leaped ahead;

Hydro's total load doubled during 1917. Despite Beck's purchase of the Ontario Power Company early that year, Ontario Hydro could not satisfy this colossal growth in demand for power. When Beck, forced under contract to continue Ontario Power's exports to the United States, tried unsuccessfully to have the federal government terminate the export permits, his political opponents proposed instead that he reduce the wasteful domestic consumption produced by his overly zealous salesmanship. Despite continual harassment by Beck, William Mackenzie's Toronto Power Company refused to sell electricity from its station to Ontario Hydro at any price. The announcement late in 1917 of Ontario Hydro's massive Queenston-Chippawa project provoked a bitter pamphlet attack on the whole concept of public power development by noted economist James Mavor on behalf of the private interests led by Mackenzie. No compromise between Hydro and the private utilities seemed to be possible. Finally, in 1920, Adam Beck managed to buy out Mackenzie's monopoly, with the municipal utilities going under city control, and the generating station and transmission lines coming to Ontario Hydro. While that purchase certainly did not stop the controversy surrounding Beck and Ontario Hydro, it effectively terminated the role of the Toronto Power Station in that controversy.<sup>11</sup>

Quite obviously then, this station has an exceptional and extremely important association with Ontario Hydro's history. The station's existence catalyzed Adam Beck's determination to compete with and dominate the private power interests. It serves as the virtual embodiment of the struggle — the brass nameplate above the entrance door still reads "Electrical Development Generating Station," and the station is conventionally known within Ontario Hydro as "Toronto Power".

*whom he had waged war for a decade without quarter being given on either side, made him feel like a conqueror. The price was more than five millions above the price at which Mackenzie was disposed to sell in 1918. Commenting on this latest Hydro acquisition, news of which buzzed around the world, Adam Beck said, "The people of Ontario have in the enlarged Hydro the largest organized power system in the world; it is practically a power monopoly."*

W. R. Plewman, *Adam Beck and the Ontario Hydro*, pp. 259-260

For similar reasons, it is atypical of the other generating stations acquired by Hydro from private interests. It is by no means a prototype; it cannot be considered the first or even the largest plant built privately and subsequently acquired by Hydro. But it is the only surviving station no longer operating, and that brings us to the present problem of its conservation.

The group to which this aspect of significance most powerfully relates is of course Ontario Hydro itself — perhaps more specifically its Board of Directors, heir to Adam Beck and the original Hydro-Electric Power Commission. Other groups would include the municipal utility commissions descended from the members of the co-operative active in the struggle at the time, and their current associations (such as the Ontario Electrical Association). There should also be a number of individuals with special interest in both the history of Ontario Hydro and its current activities for which this station would have importance.

The manner or mode of significance in this case is generally equivalent to that of Toronto's electrification: education, tourism, and the community pride of a special community (the heirs of the original public power movement). But this aspect should appeal to a wider public, and so may be judged to be relatively more useful in simply quantitative terms than the third of our themes. It is primarily important at the provincial scale, but reinforced regionally and locally in those municipalities most involved in Hydro's early years.

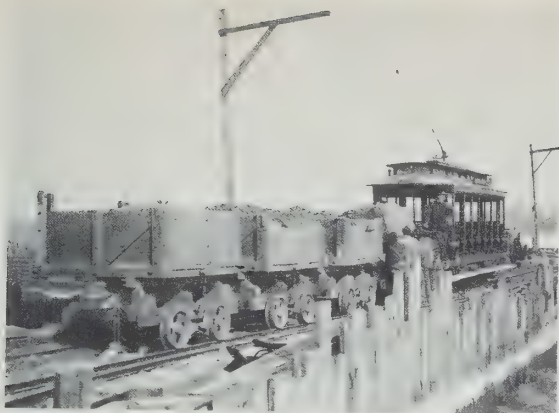
## Technical innovation

Thomas Edison's most important electrical innovation was not his light bulb of 1879, but the complete central electrical generating and distributing system first publicized a full year earlier. Edison invented the electrical utility business. His first operating systems using central stations generating low voltage direct current were installed in New York, London (England), and Milan in 1882. It quickly became apparent that although immensely profitable, the system had drastic limitations. The DC system gave way to a higher-voltage alternating current system, permitting high voltages and low energy loss in long distance transmission and the ability to decrease or step down voltages for safe domestic and commercial consumption. These advances were made practical by George Westinghouse during the 1880's, and in 1891 the Frankfurt Electrical Exhibition demonstrated the practicality of an 8,500 volt AC transmission line carrying energy from a waterfall at Lauffen, 110 miles distant. The full power potential of Niagara Falls was now within reach. In technological terms, the truly pioneering development at Niagara Falls was the Adams power plant on the New York side of the river, which began to transmit power to Buffalo at 11,000 volts in 1895 from (at first) three 5,000 horsepower generators. The largest American generators up to that time had had a capacity of 150 horsepower. The station used a deep wheelpit and long connecting shafts between water turbine and generator, a configuration used later in both the Canadian Niagara and Toronto Power Stations.

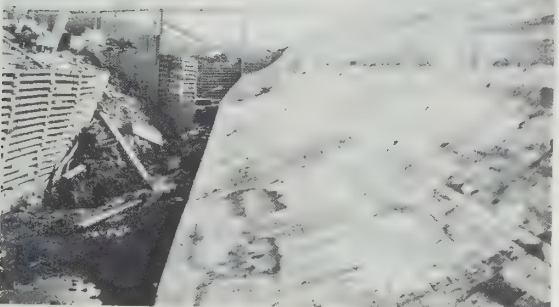
Very little basic technology was developed in Canada. All the major projects were built under patents and rights developed in the United States, but the adaption to Canadian requirements made each project innovative to some degree. Ontario's first major long-distance generation and transmission scheme



22



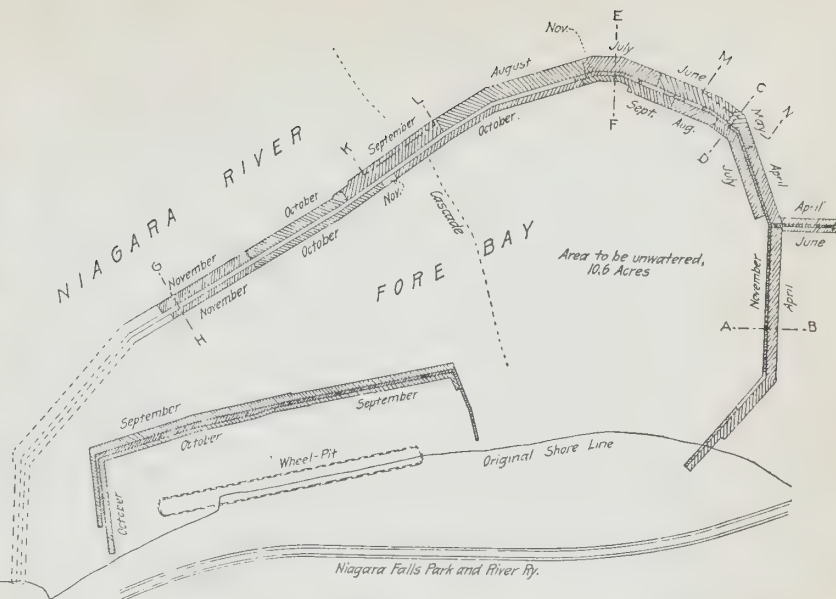
23



4



25



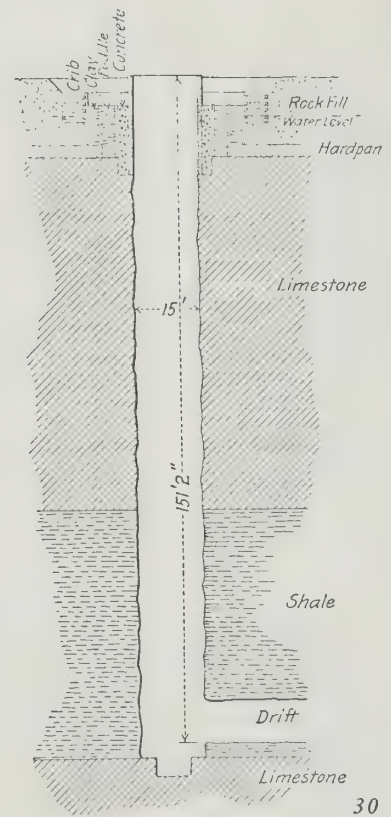
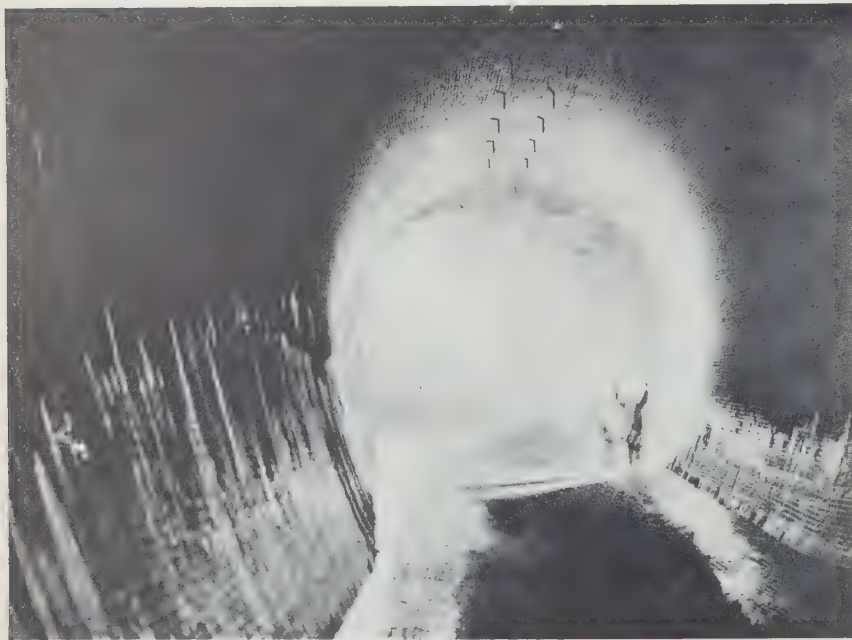
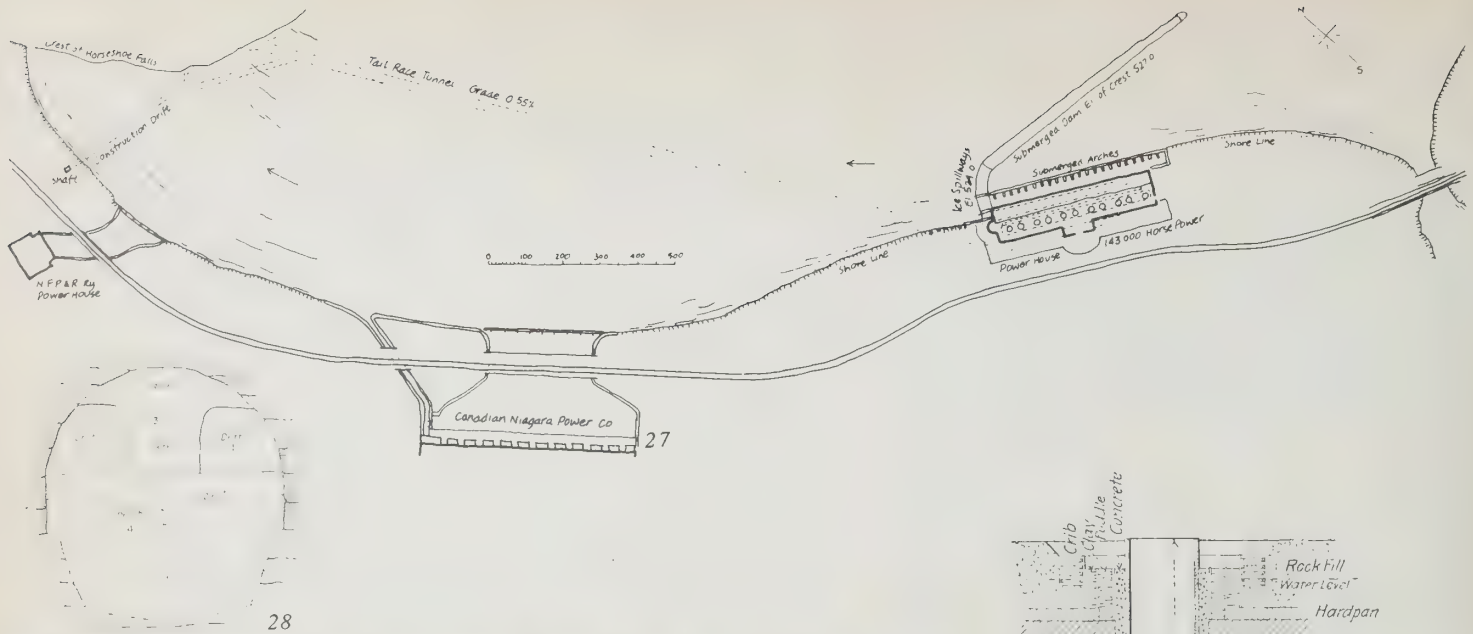
26



**Construction, water control works:** The project required dewatering a large acreage of boulder-strewn riverbed in order to build the gathering dam, intake structures and wheelpit (25). The main cofferdam

(22) was completed in November 1903, and the gathering dam and arch structure were almost completed by November 1904 (23) and January 1905 (24). Because the area was never completely de-

watered, a second cofferdam protected the wheelpit construction (26).

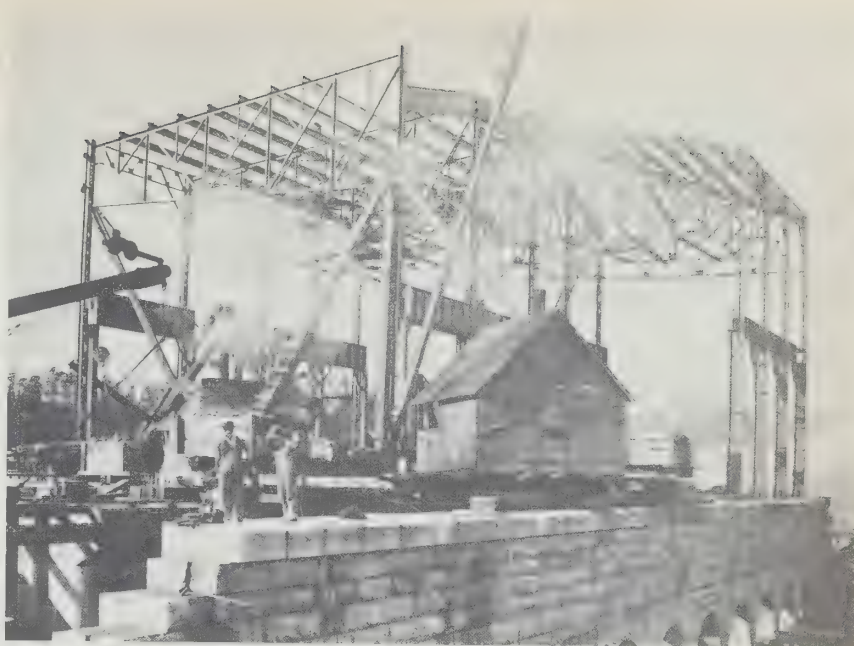


**Construction, tailrace tunnel:** The main tailrace tunnel, among the largest in the world, as planned in 1905 (27, 28, 30), and as completed, 30 November 1906 (29).

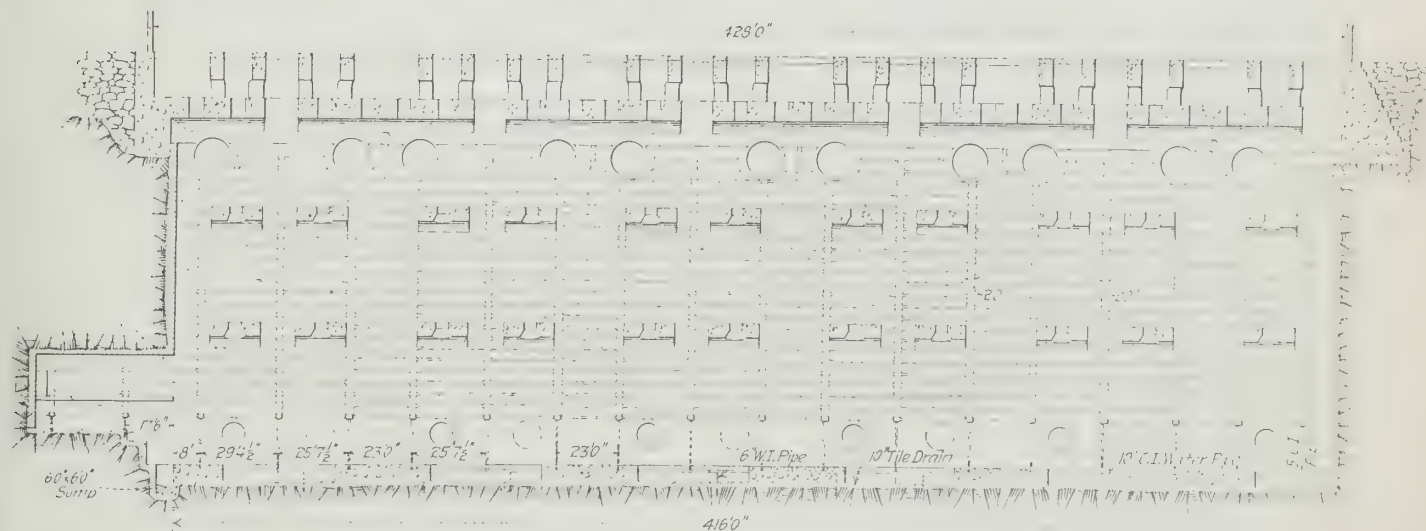




31



32



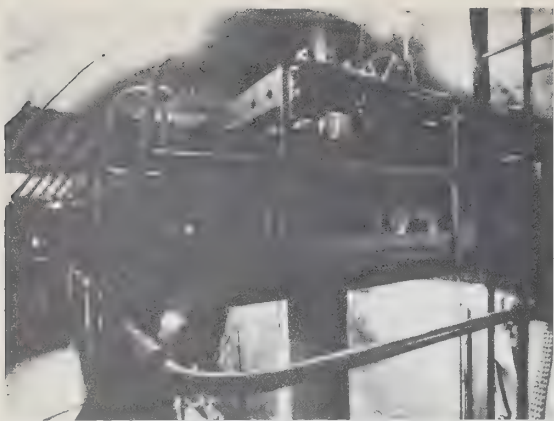
33

**Construction, wheelpit and power house:** After the trials of flooding encountered in tunnelling beneath the rapids, building the wheelpit and power house were relatively uneventful. But the wheelpit walls

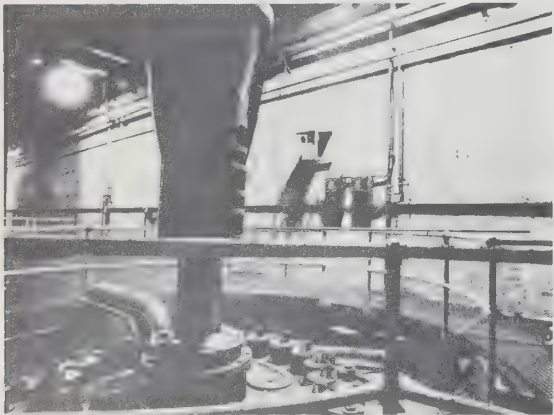
tended to squeeze inwards, up to 3" at the centre of each long side, and bits of rock sometimes exploded off the wall during excavation. Years afterward, the layers of limestone and shale were discovered to be

moving separately, but quite slowly, from each other.

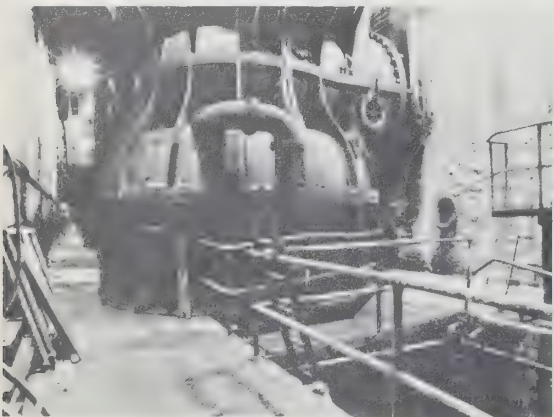




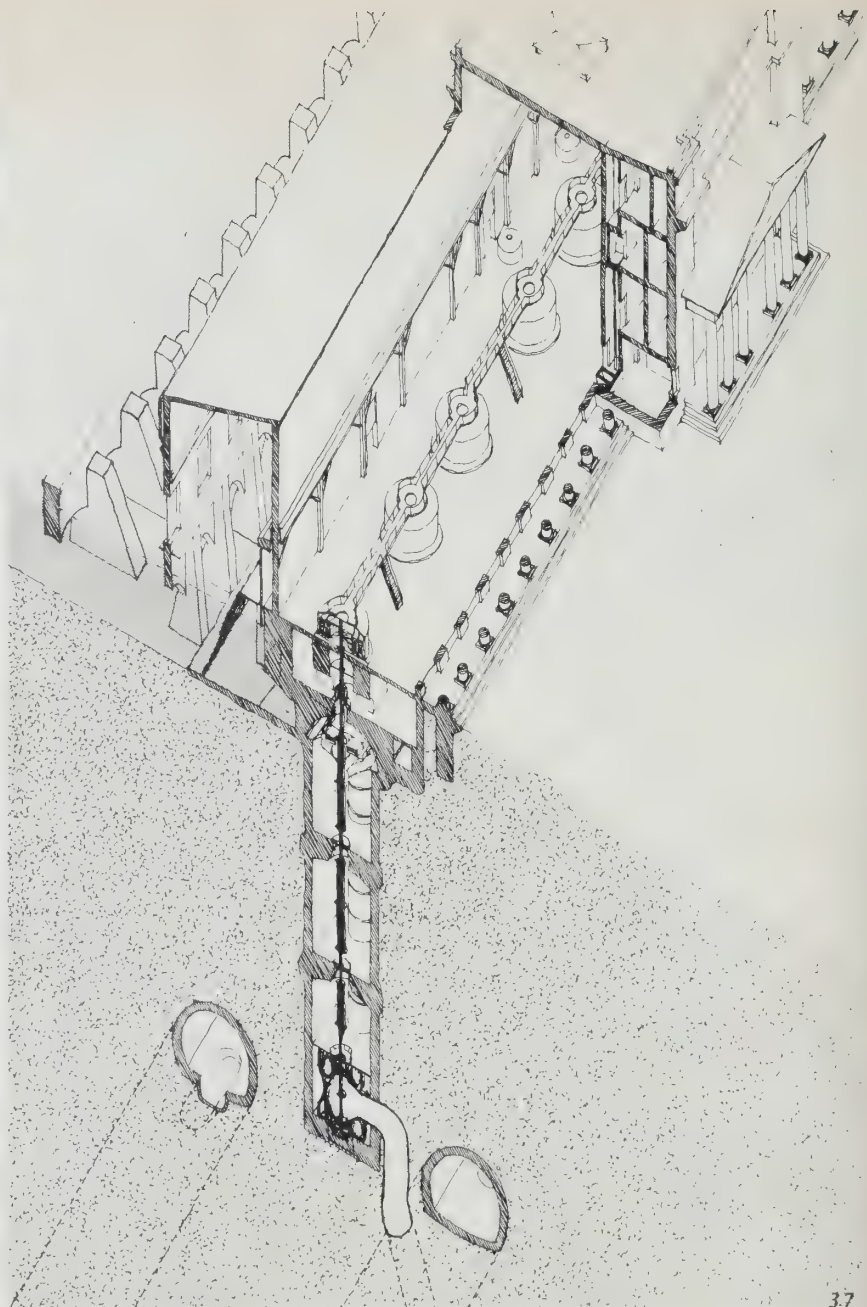
34



35



36

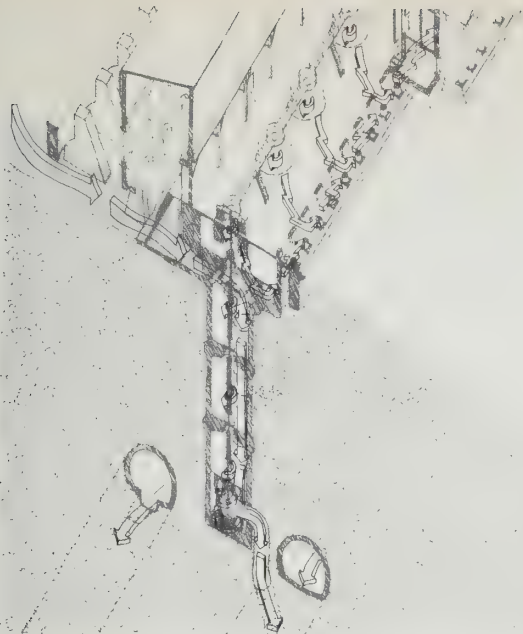


37

**Operation (37, 38, 39):**  
Water from the rapids,  
diverted by the gathering  
dam, passes through the  
outer forebay and inner

forebay, whose walls divert  
winter ice, and thence to  
the screen room (40),  
through the intake gates,  
down a series of steel pen-

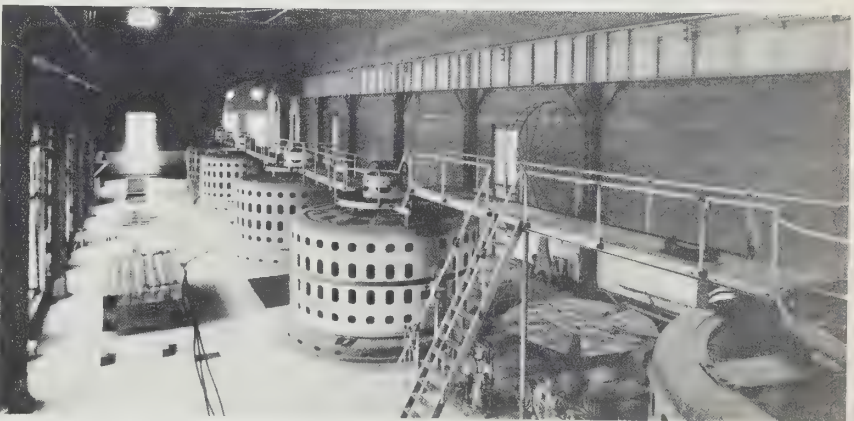
38



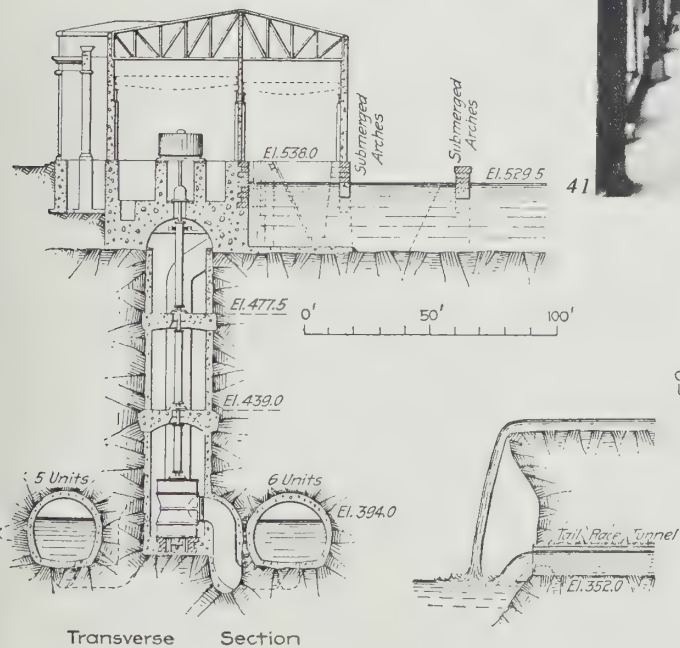
40



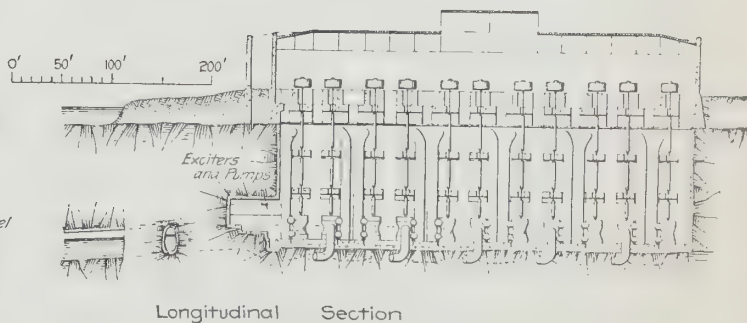
41



39



Transverse Section



Longitudinal Section

stocks into the turbines (36), then out into the discharge and tailrace tunnels, eventually rejoining the river beneath the Falls.

Each turbine spins a shaft (34, 35), which revolves inside an alternating generator at ground level above (41).



was the Cataract Power Company's 35-mile, 22,500 volt, 3,000 horsepower project from DeCew Falls to Hamilton in 1898. In Quebec, an 80-mile line connected Shawinigan Falls to Montreal in 1899. The Ontario Power and Canadian Niagara Power projects begun in 1902 used larger generators, perhaps double the size of the Adams units, but their transmission lines were short and of not much higher voltage. The Electrical Development Company's Toronto Power Station appears from contemporary accounts to have had the world's largest generating units, at 15,000 horsepower capacity. Its transmission line, slightly longer than the Shawinigan line, was energized at up to 60,000 volts, again reputedly a world's record at that time. What added a note of nationalistic pride was that these were Canadian-built. The equipment was not technically innovative, but it did show Canadian General Electric's considerable manufacturing sophistication.<sup>12</sup>

The civil engineering of the construction itself and the mechanical engineering of its water flows were also of technological importance. As we have seen earlier, the engineers and entrepreneurs were quite proud of their achievement in taming and reclaiming parts of the riverbed; in digging the wheelpit; and in excavating what was among the world's largest tunnels between the station and the rock face behind the Horseshoe Falls. Much of this work necessarily lies hidden beneath the ground and the river itself. Particular ingenuity in dealing with problems of ice accumulation is only visible to a practiced eye.

For the most part, it is apparent that the electrical technology of the station has quite representative associations, rather than exceptional ones. In an era of rapid technological advance, it should not be surprising at all that the station possessed some contemporary world records. And given Canadian General Electric's early acquisition of patents and strong manufacturing capabilities at the time, it should be no more surprising that the most sophisti-

cated aspects of the station were Canadian-built. However, we must consider the civil and mechanical engineering of the station to have exceptional association with the techniques of the day, primarily because in such a place any major construction poses problems requiring the adaptation of conventional practice to quite unconventional solutions.

This follows for the station's relation to a material type. It lies in a continuum of technological development and change, representing neither the first nor last of its scale, but possessing idiosyncratic technical characteristics that would make it stand out a bit from other generating stations of the era. For instance, it was large but not the largest. So we must consider it partly typical (with respect to its electrical engineering) and partly atypical (with respect to its civil and mechanical engineering).

This has particular vernacular importance in terms of the intrinsic quality of the equipment and subterranean civil works. After all, everything in the station was specially made for the project — even a great deal of the mass-produced equipment must have been made for this project alone. It is impossible, even in photographs, to give an adequate sense of how everything fits together, especially below ground level. Being inside the building would be the only satisfactory way to appreciate this vernacular character of a specific engineering solution to the general requirements of power generation. This may also have some general archaeological implication, since essential evidence of some construction practices may be hidden. Certainly, the complete station in its dormant state is of legitimate interest to the specialty of industrial archaeology, whether features are hidden or visible.

The groups to whom this technological aspect would seem to appeal would include individuals and associations with keen interest in industrial archaeology

*Altogether the design of the latest Niagara power plant shows in comparable parts a determined attempt to improve on its predecessors. In some respects, however, the most striking characteristic of the design is its boldness. A proposition to cofferdam the Canadian rapids above the falls, and to drive a tunnel under these rapids to an outlet in an unknown cliff face behind the great cataract was not one to be entered upon lightly. There was ocular evidence that the builders would have their work cut out in damming the rapids, but even here there were no definite data to base calculations upon; the depth of water and the character of the bottom were both unknown. It was something, however, to know the general character of the task ahead; even this knowledge was denied when it came to planning the tunnel work. To challenge the unknown but always possible difficulties of the cofferdam and tunnel work required no small degree of courage on the part of the men who lent their bank accounts to the task as well as on the part of the engineers.*

*Engineering News*, LIV, 22, pp. 577-578.



and the history of technology. Chief among these would be the Society for Industrial Archaeology. Groups of engineers such as the Sandford Fleming Foundation with demonstrated concern for engineering history and its artifacts certainly have an interest in this aspect. To some extent this should also be true of the descendents of the companies involved in the Toronto Power Station's construction; we have already seen that Canadian General Electric may have an interest here. And because of the rather dramatic combination of all these engineering works within the station, it would seem to be attractive to the general public as something of a spectacle.

Following on this, the potential usefulness of the station to these groups lies in every mode of significance. The station provides extraordinary research opportunities for the study of technology, and an associated educational potential for presenting that research to the public. This of course extends to more general recreation and tourism potentials, given the combination of the intrinsic character of the spaces created to house the equipment and the equipment itself. The pride of the electrical industry in its historic achievement may also be a factor in the utility of the station's conservation.

The scope of all these facets is exceptionally broad. While the technology was not as dramatically innovative as that of the Adams plant (which no longer exists) on the American side of the river, the simple fact of the station's existence with its equipment both intact and dormant gives it industrial archaeological importance at an international level. And the station's relation to technology is important on Canadian, provincial, and regional levels as a consequence of its various ties to the manufacturing industry and the engineering profession.

## Architecture and industry

Up to the beginning of the twentieth century, architects had had very little to do with the design of buildings to shelter industrial processes. The reasons for this lack of connection were manifold, but among them were the rapid changes in process and technique in most industry, a corresponding impermanence in the buildings required to contain the changing equipment, and a further reluctance or inability on the part of capitalists to invest much in the outward appearance or quality of their industrial buildings. Nevertheless, the owners of industry and commerce must have been proud of their achievements and no doubt wished their edifices to be impressive to others. In the early days of large-scale industrialization in Canada, buildings for industry were imposing simply because of their size and consequent domination of urban skylines. On the other hand, buildings for commerce, insurance, and banking sought impressiveness in their increasing and deliberate architectural dignity and stylishness. But in those industries reaching technological maturity at the end of the Victorian era, the necessarily close ties to finance brought in men with experience in and a taste for architecture to deal with the question of an appropriate architectural treatment for the new industrial buildings. This is most vividly demonstrated in the electrical utility business, in the building of the Toronto Power Station, and in the roles of its architect, E.J. Lennox, and his clients in the Electrical Development Company, all of whom had had experience in commissioning the work of professional architects.

Edward James Lennox (1855-1933) was a Toronto-born architect whose best-known work up to the time of the Toronto Power Station was the Toronto City Hall, a commission won in competition in 1886, and completed in 1899. His career is not well-documented; we do not know by what means he and the

1903

Frederic Nicholls Esq.  
Vice President and  
General Manager,  
Electrical Development  
Co. of Ontario Ltd.,  
Toronto, Ont.

Dear Sir, — In accordance with your instructions I herewith send you preliminary sketch for your Company's power house at Niagara. Receiving instructions to prepare a design that would be characteristic in appearance and answer the purpose for a power house and at the same time have a good appearance from the Park side, I have submitted a design that in my opinion will answer this purpose.

After due consideration I decided to adopt a classic form of architecture, therefore I have designed the building in the style of Italian Renaissance, believing this style of architecture to be one of the most adaptable to answer the purposes designated. The building will be about 500 feet long and 70 feet wide, and have an elevation of about 40 feet in height. The front elevation will

have a centre and two end bays and the spaces between centre and end bays of the facades will be set back about six feet with large windows and forming a loggia. In the front of this loggia will be formed a colonnade bringing out the upper portion of the building with a proper proportioned entablature, balustrading, etc. The main wall behind the colonnade will be carried up above the balustrading several feet to receive the roof, the floor of the loggia will be raised three steps. The intention is that the public may pass in through the colonnade and along the loggia to look down into the machinery room. The centre bay will be enhanced by a portico which will be in keeping with the architectural lines of the colonnade with entablature, etc., and this bay will be further enhanced by being carried up several feet above the main roof. The end bays of the building will be similar to centre bay, formed semi-circular and projecting and have colonnade around curve of same to give similar



effect to the front colonnade and for the purpose that the public can look down through large window openings and have an end view of the interior of the building. The rear facade of the building next the river to be finished plain.

It is the intention to form around the building a wide terrace that will lift the building up above the roadway level several feet and to form ascending steps to same that will be continued around the several sides of the terrace enhanced here and there with parapets which will be

finished off with handsome lamp posts. The top of the terrace leading from the steps to the building will be laid out with paved walks, sodded and formed with flower beds so that when the building is finally completed it will have the appearance of being set up above the surrounding level, which will have a handsome appearance from the park.

In connection with the building, might say that it is the intention generally speaking to build it of light granite, not to have any unnecessary elaboration but to emphasize its beauty

42. Rendering of power house, 1903; likely done very hastily, given the wayward sixth column of the central portico!

by pure architectural lines and proportions so that when the building is completed it will have a characteristic appearance to answer the purpose for which it is intended, namely, a power house.

Yours very truly,

E. J. Lennox, Architect.

undated letter (c. 1903) contained in *Interim Report of the Electrical Development Company of Ontario Limited and Toronto and Niagara Power Company*, Toronto 1904

syndicate became associated. But he was apparently hard at work on the power house (as well as the project's Niagara Falls and Toronto transformer stations) as soon as the Electrical Development Company began its engineering work in the riverbed. His design gained Parks Commission approval on 4 January 1904. In contrast to the Romanesque revival character of much of his previous work (following upon H.H. Richardson's stylistic innovations in the eastern United States in the 1870's and 1880's), Lennox chose what he described as an "Italian Renaissance" style, "a characteristic appearance to answer the purpose for which it is intended, namely, a power house". His choice contrasted boldly with the hipped roof and rusticated masonry of the Canadian Niagara Company's plant downstream, and subtly with the rather more French neo-Classicism of the Ontario Power Company's intake works upstream. Lennox's apparent eclecticism at this time was quite typical of contemporary architecture.

The turn-of-the-century rage for the Classical came indirectly from the French École des Beaux-Arts. The École's consideration of buildings as members of categories or types with similar programmes; the use of Classical, especially Roman, plans, axes, orders, and ornament in both conventional and unusual manners; and indeed the pedagogical approach of the school itself, all permeated North American practice. These influences were more powerfully felt in the United States than in Canada; several notable American architects of the late nineteenth and early twentieth centuries actually studied at the École, in contrast to the traditional apprenticeship in a local architectural office common in Canada and the U.S.A. But the Beaux-Arts influence scored its most dramatic triumph as the style of the modern age in a series of great public expositions beginning with Chicago's in 1893. Notwithstanding the more fundamentally innovative works of Sullivan, Wright, and others in the 1890's, the public came to associ-

ate the excitement and adventure of the rapidly developing machine age with the buildings in which its artifacts were displayed (and among the artifacts at Chicago's Columbian Exposition were George Westinghouse's AC generators, shown publicly for the first time). The Classical styles deliberately evoked associations with the cultural grandeur of Imperial Rome and the Italian Renaissance, and these were not lost on the fair's visitors — nor indeed on other architects and their wealthy clients. Almost every exposition building anywhere down to the 1920's was of Beaux-Arts lineage. We do not know what buildings or publications may have motivated E. J. Lennox in his employment of the academic style, but one influence might have been Buffalo's Pan-American Exposition of 1901, which displayed not only a panoply of (occasionally garish) Classical pavilions but also an exhibit of new electrical technology powered by Westinghouse generators several miles away in the Adams station at Niagara Falls.<sup>13</sup>

So we see Lennox's Italian Renaissance styling to have been appropriate on several counts. It was an emerging modern style reflecting the pride of industrial capital in its achievements, and it could be employed to advantage on a building whose purpose required permanence. The style could evoke antecedents in the commerce of the Roman empire and the Italian city-states, and match the then current preferences in commercial and financial architecture. The style was recognizable by the public as both modern and appropriate to the new technology, as well as a fitting complement to a park or exposition setting. Consequently, the design's neo-classicism would have to have been positively received by the Parks Commission. While the Beaux-Arts influence has been long regarded by architectural historians in this century as a retrograde development blocking the emergence of a genuinely modern architecture, there is nevertheless little doubt that at its construction the Toronto Power station was an important

1904

*Queen Victoria Niagara  
Parks Commission  
Toronto  
4 January 1904*

*Frederic Nicholls Esq.,  
Vice President and  
General Manager  
Electrical Development  
Company of Ontario  
Toronto*

*Dear Sir:—*

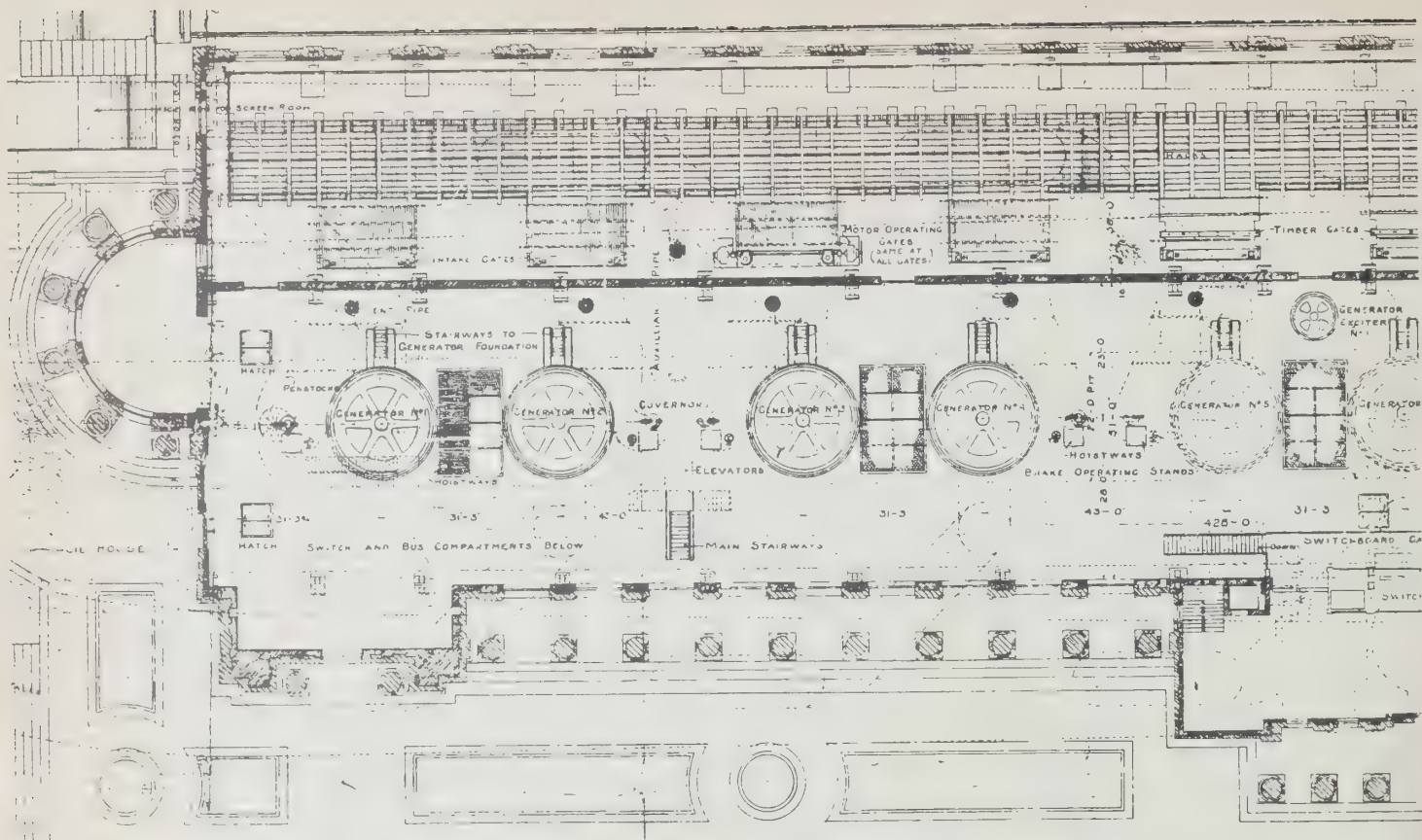
*I beg to inform you that at a meeting of the Niagara Falls Park Commission, held in Toronto on Saturday last, I laid before the Commissioners the colored plan of the power house proposed to be erected by the Electrical Development Company at its intake works in the Park, and I have pleasure in informing you that the Commissioners were greatly pleased with the design of the structure, and passed a resolution approving of the same.*

*Yours truly*

*J. W. Langmuir  
Chairman*

cited in *Electrical Development Company, Minute Book I*, 5 January 1904





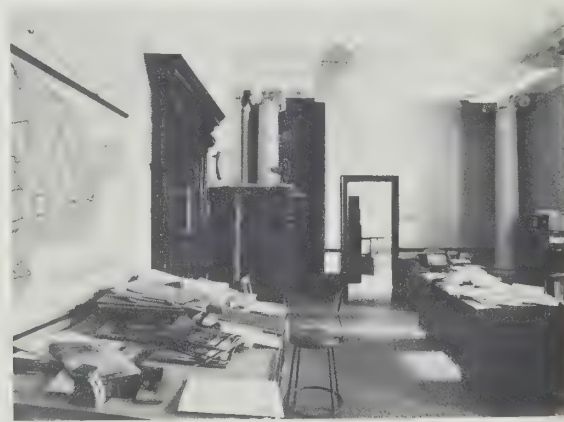
43



44

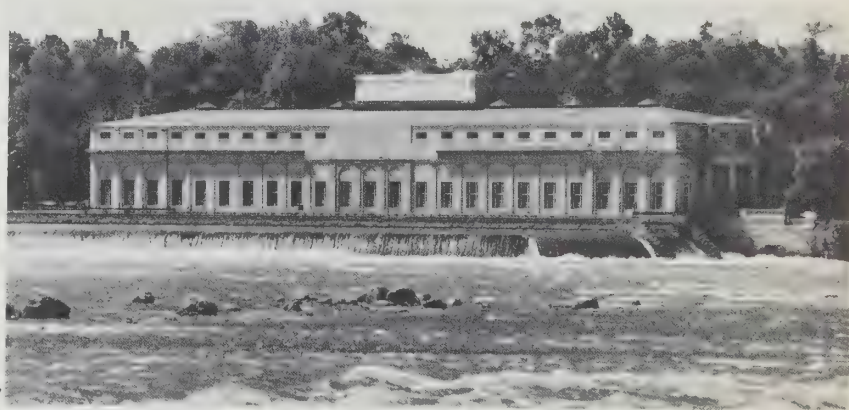
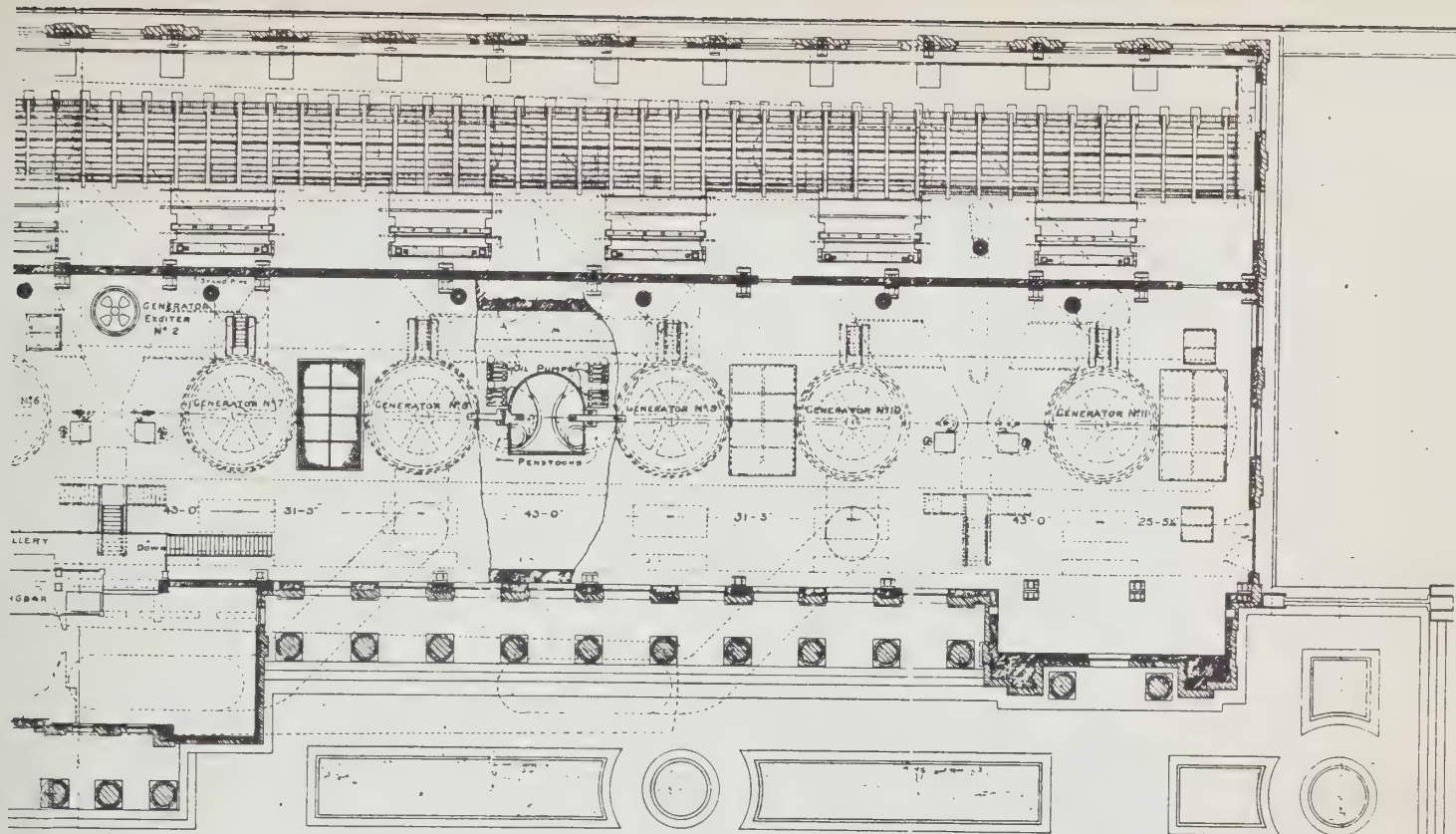
43. Main floor plan.

44. The working interior, 1979: the generator room, looking south.



45

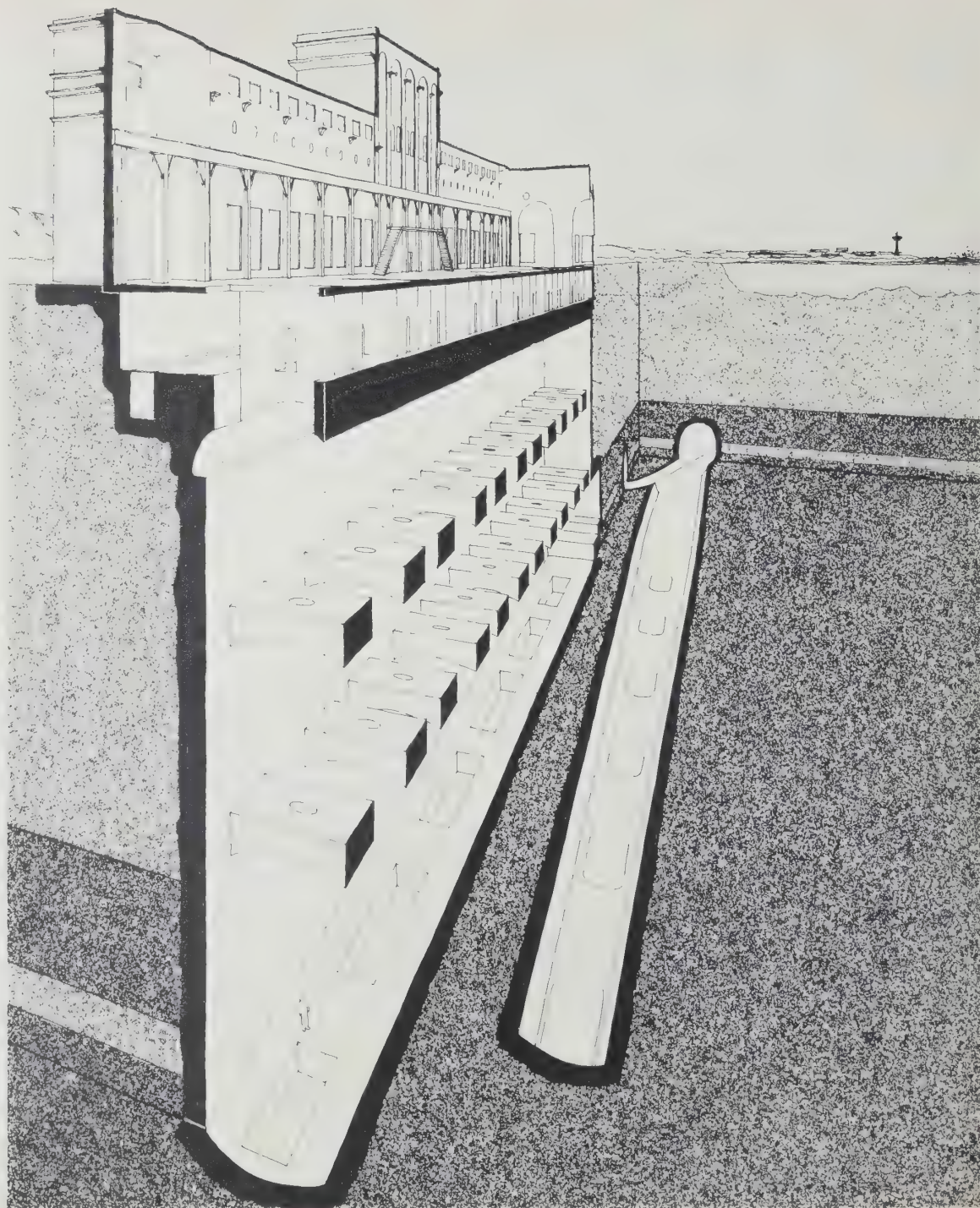
45. The supervisor's interior, 1979: the front office, currently used by the international joint commission to monitor the Niagara River, retains its plaster, iron, oak and mosaic details.



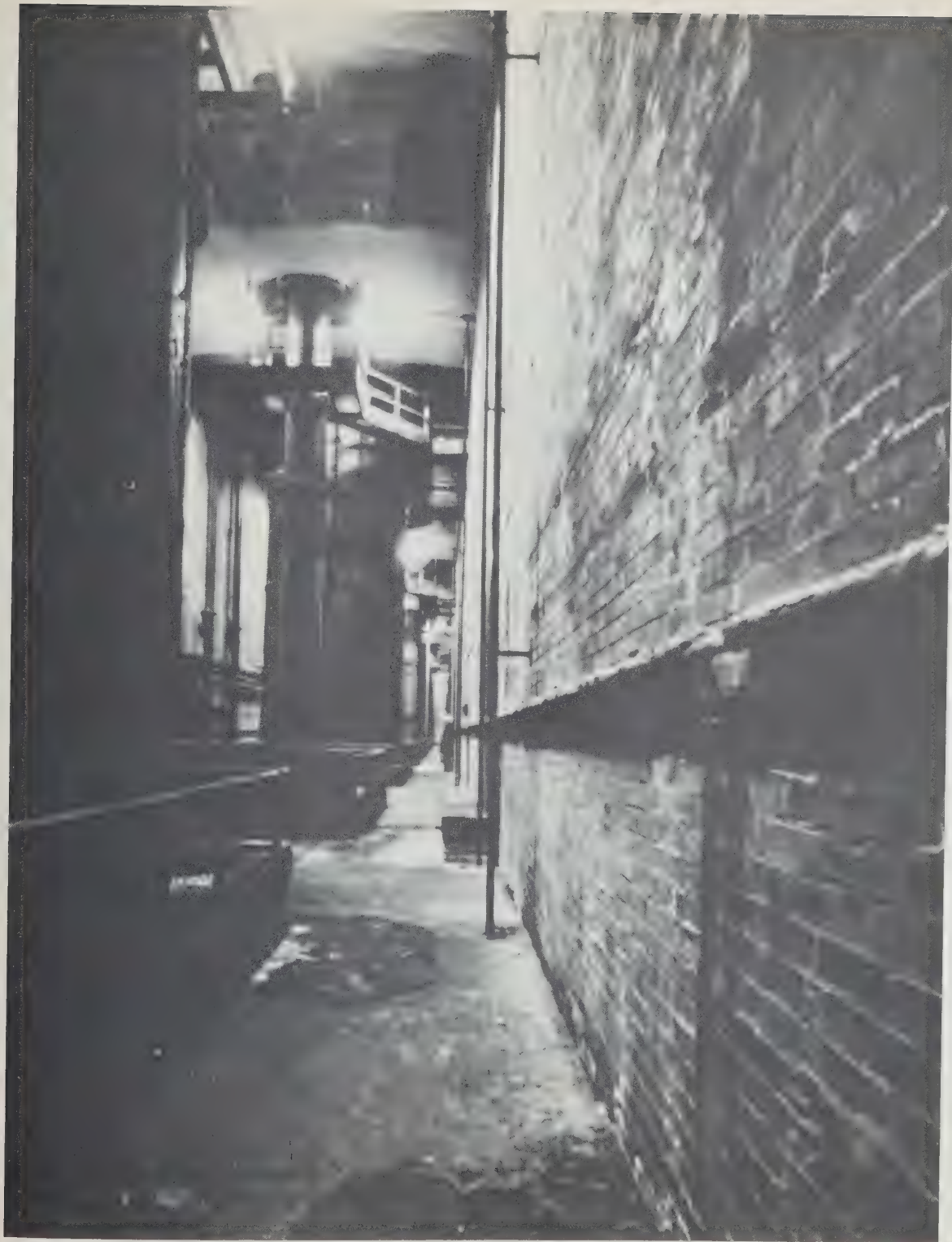
The facade facing the Niagara River, under construction in 1905 (46), and as it appeared in 1979 (47), minus its central pediment, removed in the early 1950's.



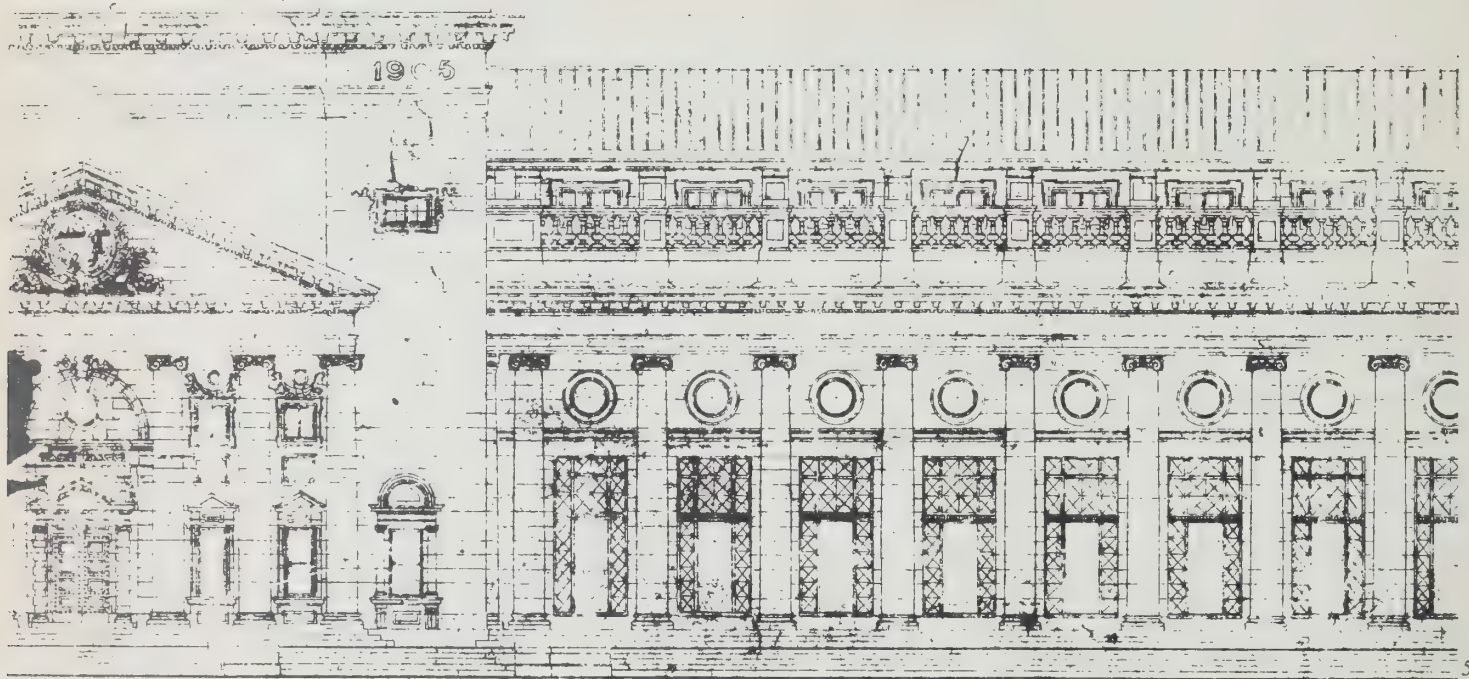
48. With the bedrock and river cut away, we can see just how much of the building is hidden from the outside. Fully three-quarters of the station's "height" is below the ground, as a narrow slot cutting through several strata of sedimentary bedrock. Here, with the machinery and penstocks removed, is a dramatic if not Piranesian cavern. At the bottom of this imaginary view is one of the discharge tunnels that exits into the tailrace tunnel, which in turn emerges, in the distance, under the Horseshoe Falls.







49. A 1979 view of the cavernous wheelpit, along its east wall at an intermediate level.



50



51



52

50. The principal (west) facade as designed in 1904, but not completed at the south end until 1913. The elaborate carving on the end bay was completed in this later construction, but the blank stone blocks

remain to this day in the central and northern parts of the facade.  
  
51. For lack of funds, the power house remained unfinished from 1907 to 1911.

52. The completed power house and its formal terrace in 1919, shortly before the station's takeover by Adam Beck's Ontario Hydro.



modern industrial building. It is undoubtedly one of the few (if indirect) survivors of the early Beaux-Arts expositions on this continent, and it still contains its original "display".

Now, those are some of the architectural associations of the station when it was built. In terms of that era they are both retrospective and representative, and deliberately so. To them we can add further representative and exceptional associations that emanate from our own time. The building's frankly historicist approach, and indeed the Beaux-Arts influence itself, is being re-evaluated and even in certain respects re-legitimized in response to the abuses of the modern movement of the last fifty years. In other words, it is becoming apparent that buildings such as this can teach us important lessons about the essential yet long-overlooked relations between architecture (both small-a and capital-A) and society. The station is certainly an important case study of stylistic diffusion, and further study may show it to be a peculiarly regional and Canadian response to the American trends of the day. As far as the career of E.J. Lennox is concerned, this is an extraordinary case — the power house and the nearby transformer station seem to have been his only non-domestic works outside the immediate vicinity of Toronto, and they seem also to be among the few surviving examples of industrial buildings designed by any well-known architect.

In relation to the architecture of other generating stations and indeed of any large industrial plant of the era, the Toronto Power Station is quite clearly atypical. While many subsequent plants employed Classical motifs, none used them in as ebullient a manner and with as much consistency. So the station cannot be considered a prototype in this respect. On the other hand, we can also compare the station to the exposition and cultural buildings of the day and find its form quite typical. It is quite possible that

the station had some influences on the subsequent buildings of that sort on one side or the other of the Great Lakes.

We have already examined some of the station's vernacular importance in relation to other themes. This paper does not describe the station's architecture in much detail, preferring to rely on the accompanying illustrations to convey as well as possible the sense of the building. But here it must be made clear that the siting of the building; its imposing monumentality; and its design, materials, and workmanship are all quintessentially irreplaceable. All of the themes can be elaborated on the basis of documents, but to understand architecture in this particular place, the building itself is the essential document. It speaks to both its external relations and its intrinsic qualities as no secondary source can possibly do.

Because the station's architectural form is accessible visually and is not restricted to the understanding of technical specialists as for example, in the matter of its engineering content, we can see a large population being concerned with its architectural conservation. Groups with architecture among their special interests would include the Niagara Falls Local Architectural Conservation Advisory Committee and thereby the city council of Niagara Falls, the Architectural Conservancy of Ontario, architectural historians both inside and outside universities, the growing group of tourists with special interests in older buildings, and possibly the wider if less architecturally-focussed population of Niagara Falls as a whole. The Toronto Historical Board should certainly have an interest in the conservation of a noted Toronto architect's work. And since the building certainly has claims to unique status beyond its immediate region, the Niagara Falls Heritage Foundation, the Ontario Heritage Foundation, and even the Heritage Canada Foundation ought to be interested and concerned that the station be conserved.



The architecture of the station has useful importance for research into the social relations of architecture, for public education based on an understanding of those relations as well as the techniques of construction, and for the associated tourism potential those uses imply. But perhaps the most potentially useful architectural feature is the space contained in the building, both above and below ground. Up to now we have examined the usefulness and attractiveness of the station's past and present existence as a power plant. But we must acknowledge the station's inability to continue as a power plant. Accordingly, the building's adaptability to other uses becomes itself a useful attribute — in fact, its most useful attribute.

The architecture of the Toronto Power Generating Station is thus for all these reasons exceedingly important at local, regional, provincial and national scales.

## Directions for conservation

In spite of this apparently exhaustive review, the web of historic associations and facets of significance of the Toronto Power Station is not really complete. There remains considerable primary research to be done if anything approaching a full depiction of its relations to the past and present is to be accomplished. One small but intriguing example of the many details that need to be explored concerns the building materials of the power house. E.J. Lennox intended in his original prospectus of 1903, quoted earlier, that the exterior of the building be of light granite. The major faces of the power house were in fact built of Indiana limestone, the material of many monumental public buildings in the Great Lakes region. But the river facade (that is, the north-east elevation) and many of the repetitive details of the main facades such as the balusters atop the front colonnades were built of a manufactured product known as Roman stone, an early form of precast concrete. From any distance beyond a few feet, the Roman stone work is indistinguishable from the limestone. This would have been an early example of the large-scale use of the Toronto-based Roman Stone Company's product. In itself, the use of Roman stone should not be surprising, especially since the supplying company's president turns out to have been Henry Pellatt. But the case provides an interesting example of the apparently intimate connections among architectural practice, the building materials industry, and the tastes and influences of the financial community. A knowledge of these connections would be invaluable in taking architectural history beyond mere questions of taste into more important matters of the essential support provided by architectural form to the cultural and economic ambitions of a society. Such knowledge would also materially assist rehabilitation work in the building.



53. The front door, 1978.

Accordingly, one direction of work to support the conservation of the station is, not surprisingly, the continuation and intensification of research into the details of its important relationships to history, to other such technical and architectural developments, to groups with existing and potential interests, and so on. Rarely does a complete and exhaustive picture of these matters emerge quickly and at the beginning of efforts to conserve such a place for future use. Nevertheless, we can see already that there are certain facets of its significance more useful in arguing for conservation than others. These are laid out in Table 2, and a brief review of the detailed discussion above should clarify its references. Clearly, the most basic elements of the case for conserving properties important to our man-made heritage are those arguments tied to specific buildings in specific places. While the six themes we have isolated are all absolutely essential to the Toronto Power Station, and reciprocally, the station is essential to those themes, the crucial arguments for its conservation for the future are those that are distinctive to its place, to its physical existence and context, and to those characteristics that render it unique and irreplaceable. In these respects, the relations of the station to the Falls and the public park, to the material evidence of electrical innovation it shelters, and to the intrinsic and external character of its architecture, form the core of its existence, and indeed for its revitalization. These relations, which in our charts seem to show up best under the heading "Vernacular", are the qualities of the resource around which revolve the cultural investments or interests of specific people and related existing and potential modes of significance. Certainly, such a cultural resource cannot continue to exist without the motivation of public and special interests to conserve these qualities of our human heritage. But without the resource, those interests can never be motivated. The social and economic costs of losing such an opportunity to diversify and enhance the attractiveness of the park



and to highlight the important contributions of this place to history and thus to the present day would far exceed the costs of its repair, conservation, and new use.

54. The screen room, 1979.

Table 2

	Cultural investment	Mode
Niagara Falls***	Niagara Parks Commission, general tourists	Tourism (non- or minimally-commercial attraction)
Canadian capitalism*	(Historic Sites and Monuments Board)	(plaque)
Toronto's electrification*	(Toronto Historical Board)	(plaque)
Ontario Hydro's origins**	Ontario Hydro	Corporate image
Technical innovation***	Sandford Fleming Foundation, Ontario Hydro engineers, professional engineers in general, industrial archaeologists, electrical manufacturers	Professional pride, special interest tourism via industrial archaeology
Architecture and industry***	Niagara Falls LACAC, Architectural Conservancy, Ontario Heritage Foundation, Heritage Canada	Tourism, especially in new use(s)



Associations	Material type	Vernacular	Archaeological prospects	Scale
Exceptional (direct reference to NPC history)	Unique	Siting on the rapids, relation to other park features - greenhouse, parking areas	Small possibility	International, provincial, local  (National)  (Regional)
Exceptional (direct reference to Hydro history)	Unique			Provincial
Exceptional, representative (direct reference to Canadian General Electric)	Typical but rare	Underground works, power machinery, water control works	Small possibility	International, national, provincial
Exceptional (direct utility for education, tourism)	Unique	Siting, underground works, views in and out		National, provincial, regional, local



55. The "interior facade" of the central office block, 1979; not so formal as the exterior but equally grand.

In undertaking the station's conservation, two crucial questions arise right away. Firstly, what are the most fitting uses to which the building and its surroundings can be put — to what end is the building to be adapted? Secondly, what are the most fitting forms for this adaptation — by what architectural means and techniques is the building to be revitalized and adapted to any new uses? To a great extent, the first question is being dealt with at this writing by the Sanford Fleming Foundation as it studies the possibility of adapting the Toronto Power Station for use as a special museum devoted primarily to the "engineering of the electrical power age".<sup>14</sup> The paragraphs below outline the current state of this proposal. The remainder of this essay examines in more detail the architectural problems and opportunities presented by the conservation and revitalization of the works.

The Sanford Fleming Foundation is a non-profit organization whose primary interest is in the advancement of engineering education in Canada. Based principally in Waterloo, the Foundation arranges scholarships, internships, and visiting professional chairs at several Canadian universities in co-operation with private industry and business, and has also embarked on a series of publications. Eager to go beyond this emphasis on formal education, the Foundation established in 1978 a special project called the Sanford Fleming "Engineerium". The Engineerium project is proposed to be housed in the rehabilitated Toronto Power Station, and members of the Foundation have received (by mid-1980) study grants from Ontario Hydro, the Niagara Parks Commission, the Ministry of Culture and Recreation, and the National Museums of Canada in support of studies for the project.

The Engineerium intends to focus on a permanent exhibit of large machinery and associated apparatus and models that relate to the development of new and highly sophisticated sources of motive and auxiliary power for the growth of Canadian industry from about 1880 into the future. Since these innovations and developments are internationally important, and since the history of electrical power development is so closely connected to Niagara Falls, the Toronto Power Station is seen as the ideal location for the Engineerium. Having been designed to support industrial loads, the structure of the station is readily adaptable to the display of machinery, and its architecture should be an impeccable complement to these exhibits. Further, the building itself and its own machinery would be considered part of the Engineerium display concept, ensuring a close fit between the architectural and museological aspects of the project. The Engineerium studies have so far demonstrated that the physical fabric of the building is sound, that in technical terms the necessary alterations are feasible, and that in marketing terms the project should be able to support its operating costs from admission receipts.

From the point of view of the Sandford Fleming Foundation, the Toronto Power Station is almost ideal as the home for their Engineerium. Given the gathering momentum of the proposal, it stands at this writing as the most likely new use for a rehabilitated station.

From the point of view of the station's conservation, the Engineerium proposal or something quite like it promises to be an especially fitting use. It is hard, indeed, to conceive of any other use that would at the same time attract a large number of visitors and promote the public display of most of the building and its equipment. Nevertheless, there are other potential uses. Certainly, if one type of museum is appropriate, then it is quite reasonable to assume

other museum uses would fit the building. Should the Niagara Parks Commission decide on the basis of a current transportation study that private vehicles in the densely used portions of the park be replaced by some form of public transit during high season, the power station might be made useful as the major visitor reception and information centre. Restaurants, art galleries, and theatres have all been successfully installed in older buildings, and would certainly have some success in this case as components of the station's rehabilitation.

It is most important that any new use be a year-round attraction, so as to begin to even out the tremendous seasonal tourist variation by making the Falls area more useful and important to the local and regional populations. The adjoining Parks Commission greenhouse, recently expanded, is one of the few year-round attractions of this sort, and a complementary adaptation of the Toronto Power Station would be mutually enhancing. Supporting this principal criterion is a corollary that would insist that the new uses of the station should be attractive and accessible to a variety of human interests. Much of the commercial entertainment at Niagara Falls (directly descended from those abuses that led to the Park's creation in 1885) is quite narrowly and predictably defined, and can be found at any major tourist attraction in North America. On the other hand, the non-commercial facilities in the Falls area appear to exist almost as direct reactions to this commercialism, and at their worst seem dour and inanimate. Emphasizing the extremes may seem unjust, but there is surprisingly little middle ground. Whatever new public use is to be made of the Toronto Power Station must take advantage both of the energy and vitality of the commercial enterprises, and of the special history and vernacular character of the non-commercial attractions. A successful combination of this commercial vitality and vernacular character in the program for the Toronto



Power Station's re-use will make a world-class attraction for the visitors to the Falls and a useful precedent for tourist areas elsewhere. It is this test that the Sandford Fleming Engineerium project and its supporting facilities must face as their details unfold.

### Housecleaning

In most building recycling projects, the existing furnishings and equipment are given short shrift. The practicalities of the new use usually combine with strict building codes and the high costs of specialized restoration to force quite intensive housecleaning. This is often the case even in restoration projects when the existing equipment does not correspond to the original or mature state of the building. The Toronto Power Station presents us with a dilemma — given that the building cannot be practically used for another purpose with all its original equipment intact, how much of the equipment and building fabric should remain to best serve the conservation objectives we have noted in considering the station's significance?

There is of course, first, the existing physical condition of the works. The power house is built of fire-proof construction. Its steel frame is clad with brick, limestone, and concrete walls; the roof is of clay tile and metal sheeting; and the interior partitions are of brick and tile. The foundation is on solid rock, and the underwater construction is of rock masonry. Much of the interior metalwork is suffering from rust and corrosion. Leaking skylights have been covered over with fibreglass to prevent further deterioration, and interior plaster and paint require extensive renewal.

The wheelpit presents an interesting problem of structural engineering. There is a general tendency for the walls of such deep excavations to be pressed

inward as the stress in the surrounding rock attempts to relieve itself in the direction of the man-made void. Thus the many heavy concrete arches that span the wheelpit. Deterioration is most apparent at one stratum, known as Gasport Limestone, near the bottom of the wheelpit. One layer of rock is shifting horizontally above another, and this inexorable geological process has caused deterioration in the brickwork at one end of the wheelpit. Several water leaks in the wheelpit indicate the disruption of some of the wall drains that line the pit behind the brick facing. There has apparently been some deterioration in the facing of the tailrace tunnels, but they remain structurally sound (although there have been no recent inspections to confirm this).

The exterior limestone and Roman stone are in generally good condition despite the humidity and chemical pollution prevalent in the area, but some stonework requires cleaning and repair. Water and ice damage to the underside of the front portico has been arrested by interim repairs. During the period of its operation, the building was heated in large measure by waste heat from the generators; currently, heat is provided by portable blower units. As the station was built to generate 25 Hz electricity, its electrical systems will have to be refitted to 60 Hz. Plumbing and sewage equipment must also be refitted or replaced. The cranes and elevators can all be used, but require repair and modification as necessary to conform to current standards.<sup>15</sup>

In general, the building is sound, but it requires an extensive cleanup and refitting to prepare it for adaptation to a new use. While the cost of this upgrading is not known, early cost estimates undertaken by Ontario Hydro for a "Museum of Electrical Progress", proposed as long ago as 1966 for the Toronto Power Station, suggest that the basic refitting cost for the power house would likely be little more than the cost of demolition. Rehabilitating the

wheelpit and possibly the tailrace tunnels would involve additional expenditures, probably of the same order. In absolute terms, the Sandford Fleming project has estimated a 1980 capital cost of five million dollars for power house renovation and display installation.

The operating equipment itself, including water control works, penstocks, turbines, generators, shafts, and accessory features, cannot be used to generate electricity without an apparently inordinately high expenditure. Even if actual operation is undertaken, it is inconceivable that more than one unit could be run. The technical problems of operation after such a long hiatus and in the face of the geological movements below grade are quite difficult. Accordingly, we can be confident that the retention of two of the eleven generating units and their appurtenances in the building itself — one certainly stationary and one potentially operable at least for display purposes — will be sufficient to serve the interpretation of the station's engineering significance. Some of the other units, in whole or in part, can be made useful for spare parts and for other interior and exterior displays.

The electrically operated hoists and cranes are essential for the dismantling of the existing equipment and would be incomparably useful in installing new machinery and heavy displays for museum purposes. Their operation would also be interesting in itself for the general public. The control gates in the screen room are currently necessary to close off the water flow, and it would seem sensible to retain their superstructures for those generating units to be retained. And while large sections of the wall separating the generator room from the screen room are not crucial for structural purposes, the wall does provide a barrier to the very high humidity of the screen room, and for that purpose would seem to require retention. Means of access from one side to

the other should thus be carefully protected from extremes of temperature and humidity, unless the screen room is itself sealed off from those extremes.

### Fitting forms

Even given an ideal or close to ideal new use for an older building, it is evident that the architectural qualities of the adaptation can be either very well or very poorly handled. The Engineerium, or something quite like it, is just about perfectly suited to the conservation of the Toronto Power Station. Nevertheless, the project has the potential to devalue and trivialize the meaning and importance of the building both inside and out just as much as it has the potential to dramatically enhance that significance. It is certainly crucial to know what features can and should be added to the station to enable its public use and appreciation. But as the ultimate contents of the station will emerge from the details of the programme for its use, it is premature to speculate on what those contents will or ought to be. Rather, we must ask a question just as crucial — how should the new forms of the new uses be designed so as to fit and enhance the qualities of the station that have made it significant?

While it might seem at first glance somewhat out of order to consider matters of design before the actual uses and functions of the building are determined, there are powerful reasons for doing so. It is clear from numerous studies that the sensory quality of man-made environments is of direct and crucial importance to social well-being; that is among other things, to minimizing unproductive conflicts, to reducing suspicion and uncertainty in human contacts, to increasing public interest in and maintenance of man-made and "natural" environments, and as a result of all this, to increasing the social and economic value of the capital invested in environmental improvements. In sum, no matter the quan-

tity of environmental improvement, the real effect is in terms of its *quality*. Not only must architectural and planning projects actually solve specific problems, they must also *be seen* by the public to be solving those problems. During the last few decades the unfortunate visual, tactile, auditory, and olfac-



56. The generator room,  
1979.

tory qualities of new development have incurred a great deal of dissatisfaction from general public and specialized critic alike. While there is little question, at least for most North Americans, that material living standards have risen in this period, environmental quality has nonetheless slipped badly. We need only look at the great increase in the tourist attraction of surviving older town centres in Europe and North America, even though their functional characteristics are no different from newer downtown developments everywhere. Such districts of modest scale and great harmony once existed in every major urban area. Perhaps their newfound attractiveness is simply nostalgic. But more likely it is rooted in a real recognition of the civility and amenity that modern developments have neglected to produce.<sup>16</sup>

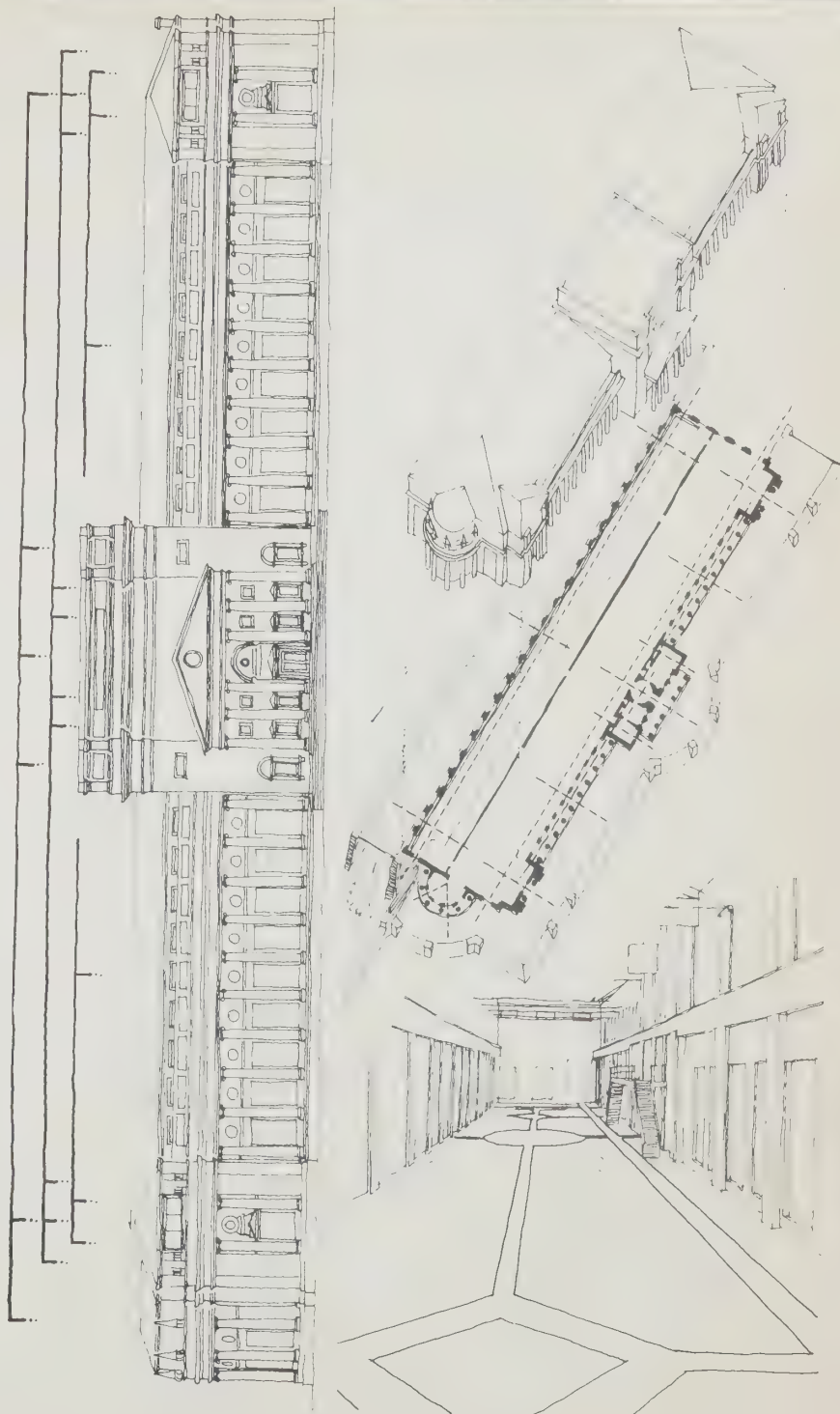
Most of the criteria for the good fit of the new forms necessary in adapting an old building or site to new uses devolve from one central factor: recognition and understanding of context. In the case of the Toronto Power Station, we have already reviewed the site's several historical and geographical contexts, down to the siting of the development relative to the major attraction of the Falls themselves. But the building itself, by virtue of the architectural and engineering requirements of 1903, gives us more detailed contexts against which to judge the goodness of the fit of new elements. While it is possible to derive a considerable listing, let us examine just a few of the more important formal characteristics of the station that could serve as the basis for the development of detailed design criteria:

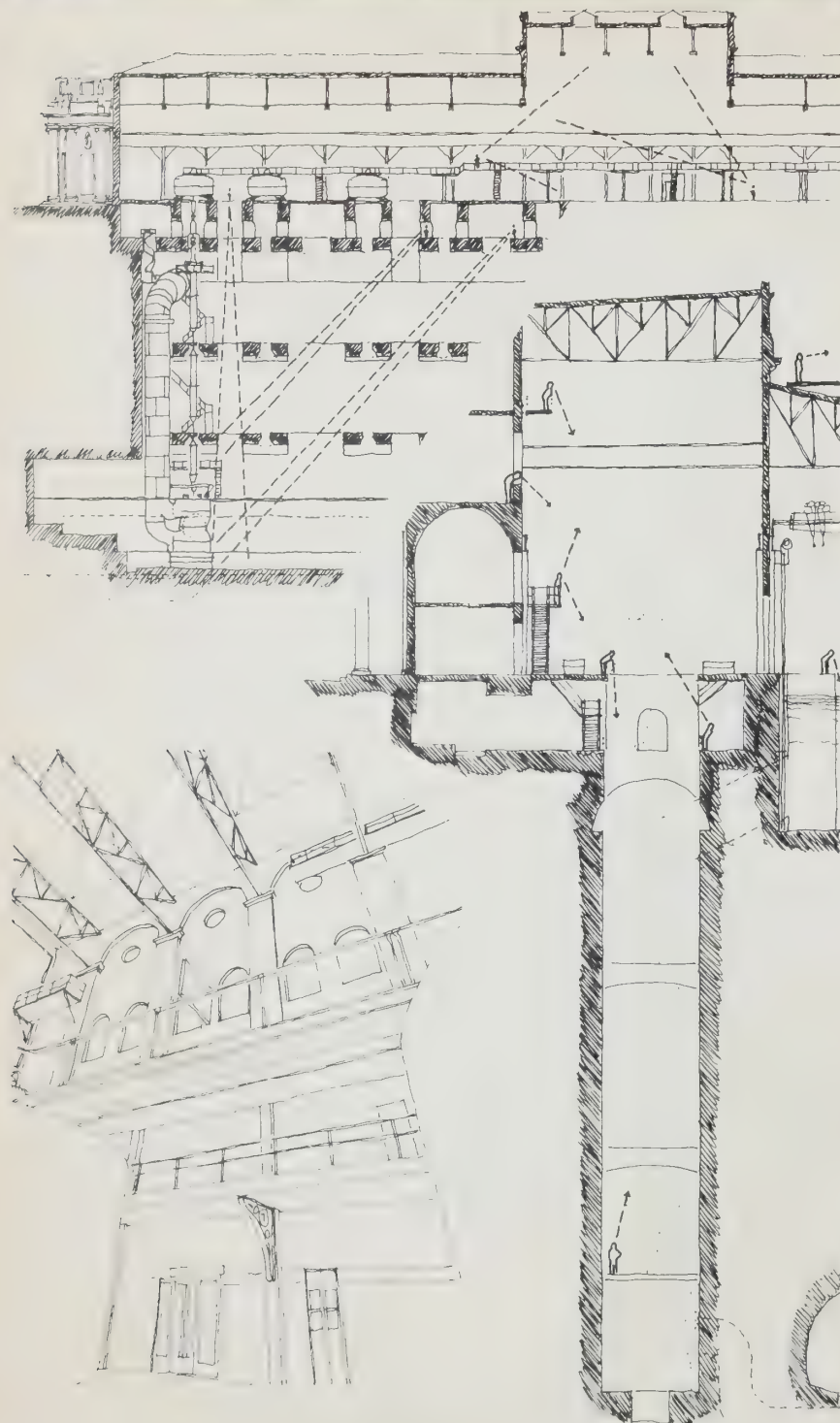
- axial symmetries;
- verticality;
- juxtaposing large and small scales;
- conventional elements and rhetorical gestures;
- Edwardian building details;
- garden "forecourt"; and
- river frontage.



**Axial symmetries.** The academic classical style of the power house demanded the use of formal and informal horizontal axes, most of which ought to determine symmetrical relationships in the plan of the building. Yet, because the external classicism is not reflected in the industrial interior, most of these axes are only implied and not expressed. The building types that served as precedents for E.J. Lennox's choice of the "Italian Renaissance" (including Roman basilicas, Michelangelo's Roman museum buildings, the Italian country villa, and the English country house) implied axial symmetries in their facades and presented such symmetries in their plans, although in many cases the implied axes do not directly correspond to the plan. In filling the interior of the station with displays, rooms, reception areas, circulation routes, and so on, the organization of the plan should respect and make use of these axes. To this end, a fitting design would:

- organize main circulation routes along the axes implied by the power house facades;
- preserve defined visual corridors along these axes, regardless of pedestrian circulation;
- pave floors in distinctive patterns and colours to designate implied or actual axes;
- align openings so that clear views into and through the building's windows are revealed;
- arrange exhibits and displays along axes to use the implied symmetry to reinforce the similarity or difference between facing elements;
- place special displays or facilities at the intersections of axes;
- align interior lighting to emphasize axes;
- deliberately break or intrude upon the building's implied axes in such a manner as to clearly define where one system begins and another leaves off; or
- combine these or other similarly *deliberate* approaches.





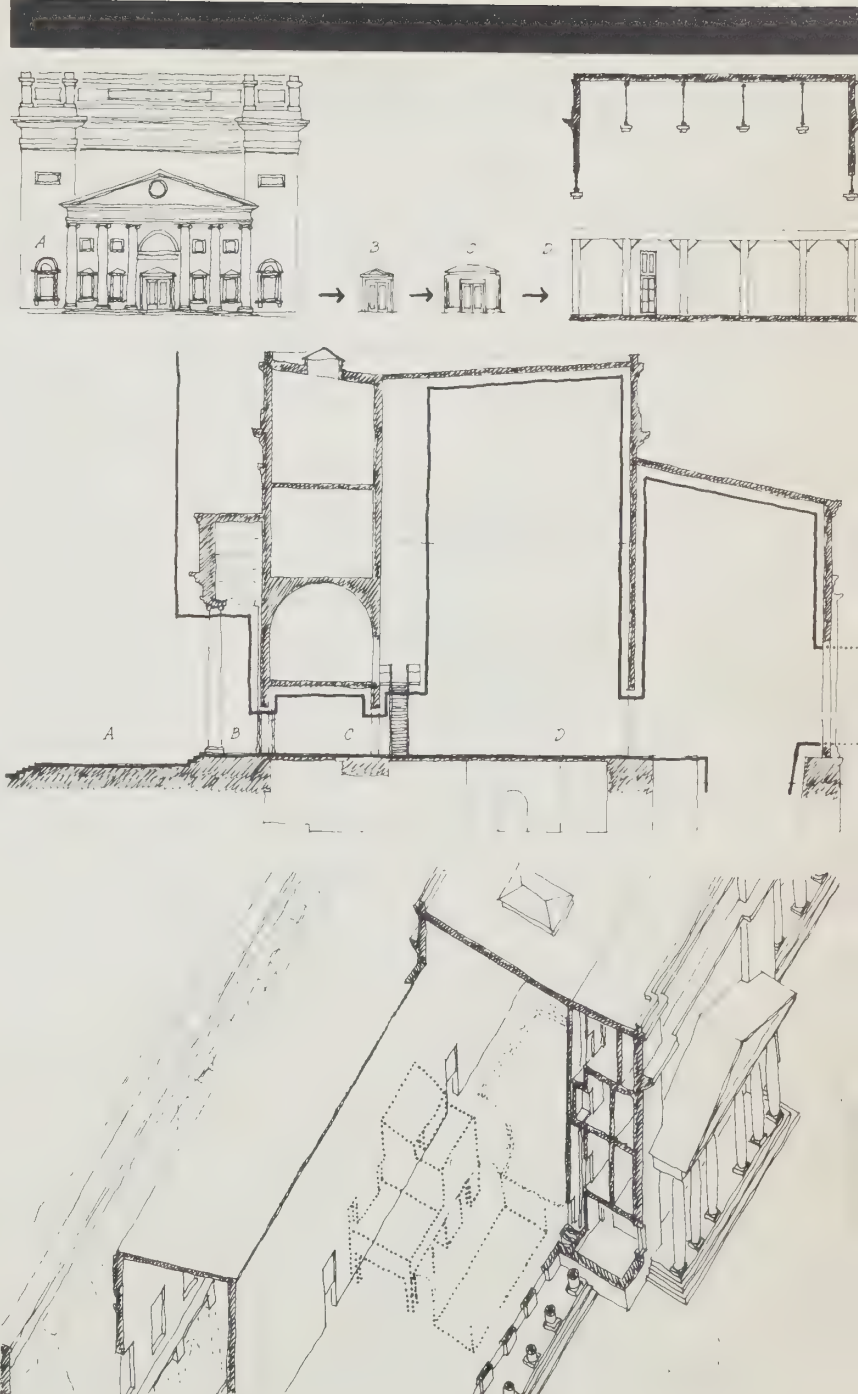
**Verticality.** Because of both the power house's considerable and varying height above grade and its even greater depth below grade, its overall external appearance as a large but single-storey building creates a rather misleading expectation of what lies within. This presents great opportunities to dramatize the stations's vertical dimensions and views, even to the point of producing vertigo. It is certainly possible now to have vertical views down from the generating floor to the bottom of the wheelpit through the grilles on the hoistways; less vertiginous views downward might be exposed diagonally when most of the wheelpit machinery is removed. And there exist further opportunities for such drama if upper level galleries and displays are installed in portions of the generator and screen rooms. But just as in the case of the formal axes, this less formal but more dramatic verticality demands a certain respect. Here, a fitting design would:

- keep major circulation routes at ground level exposed to the full height of the power house;
- provide various public viewpoints above ground level in different parts of the power house, with long views level with the horizon, up to the roof, and down to and even below the main floor;
- provide diagonal and vertical views down into the wheelpit, especially to the retained machinery, and reinforce the views with directed lighting and even terrestrial telescopes;
- keep mezzanines and upper level galleries out of the highest vertical space above grade at the central skylit portion of the generator room, thereby dramatizing its height by contrast with the rest of the space (but enable access to the existing high level galleries so far as possible);
- for this reason as well as for climate control, retain unbroken except for minimal upper and ground level access ways the main interior wall separating the generator and screen rooms;
- take advantage of vertical spaces for exhibits and

- displays with some height; and
- provide viewpoints out from the building at high levels or from the roof.

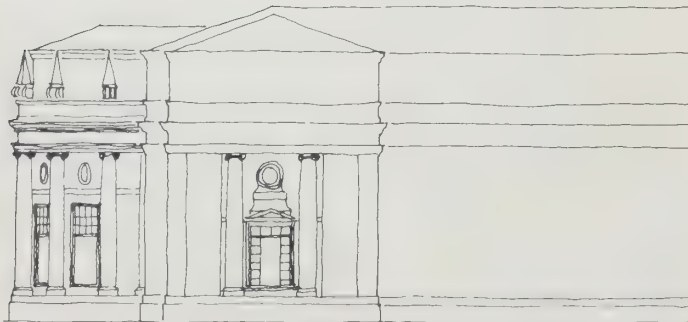
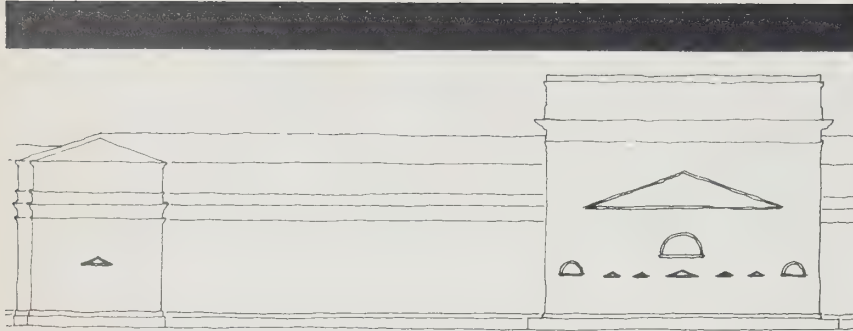
**Juxtaposing large and small scales.** The main entrance into the power station is a fascinating sequence of scales from the wide open terrace up the steps beneath the portico into a small round foyer and straight through beneath the control gallery into the wide open generator room. This is the most impressive such sequence, but the juxtaposition of larger and smaller spaces does occur around the exterior walls of the generating room. While this sort of situation can be found in most architecture, and in this case merely reflects the technical requirements of the generating station, the contrast between very small and very large is exceptionally dramatic. A tremendous opportunity would be lost if this quality were not capitalized upon. Accordingly, the appropriate adaptation of the interior would:

- define and keep open certain major spaces in the generator and screen rooms, especially the central space beneath the main skylights;
- alternate enclosed, small-scale, low-ceilinged access ways and displays with wide-open vistas and full-height areas;
- build small-scale environmentally-controlled zones as required for the building programme and leave the large scale spaces with minimal environmental controls, but with visual connections (windows) between;
- build any additions to the power house, likely only on the river (east) and service entrance (south) elevations, at a small scale to provide an entrance transition and to emphasize the bulk of the power house;
- emphasize the dramatic scale of the wheelpit by concentrating any installations in one tightly defined area with views of the remainder;
- retain the existing main entrance as the principal





- public entrance to the power house; and
- devise specific walking routes throughout the building to take advantage of contrasts in scale while providing similar contrasts of concentrated exhibits and quieter, "resting" areas.

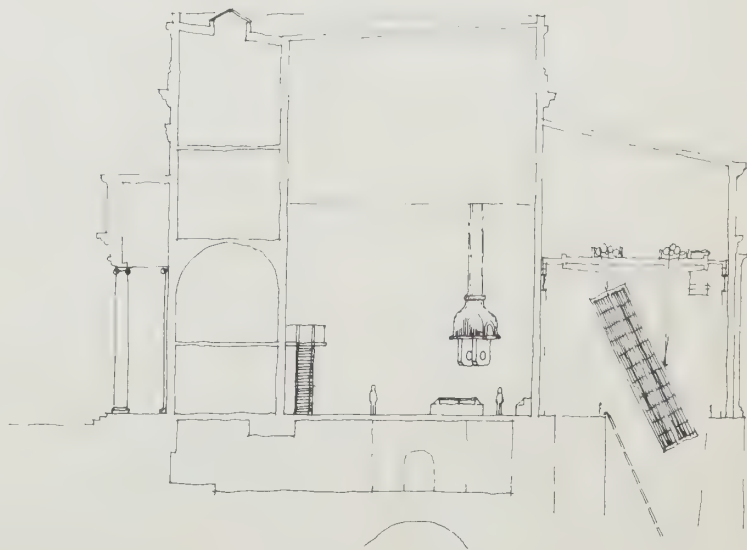


**Conventional elements and rhetorical gestures.** The power house provides us with splendid examples of the juxtaposition of architectural elements with commonplace or conventional relations to their actual uses, and other elements with exaggerated or rhetorical relations to their uses. For instance, the front door of the main entrance is for this purpose the conventional element, the relatively straightforward functional bit. Around the outside of the door is a rather elaborate stone frame, which not only contains the double door, but from a distance seems to be an enlarged door itself. Not all door frames do this. Standing back further, we see that the hexastyle (six-columned) portico and its pediment not only serve to protect the doorway itself from the elements, but also serve to emphasize the central entrance as a whole. Both door frame and portico are rhetorical gestures related to the conventional element of the main doorway. Similarly, the main colonnade is a rhetorical gesture accommodating the architect's intent that the public come up to the main windows to see the generators. And the cylindrical apse at the north (or Falls) end is an even more grandiose gesture enabling, indeed compelling, a long view down the generator room. These juxtapositions of elements correspond somewhat to the contrast between large and small spaces, but the key to their underlying relation is that the rhetorical gesture refers to or signifies the conventional element. This kind of treatment is a necessary part of academic classicism. An associated technique is inflection, where parts of building elements are used at different scales, such as different sizes of pediments on a major facade, to unify the composition

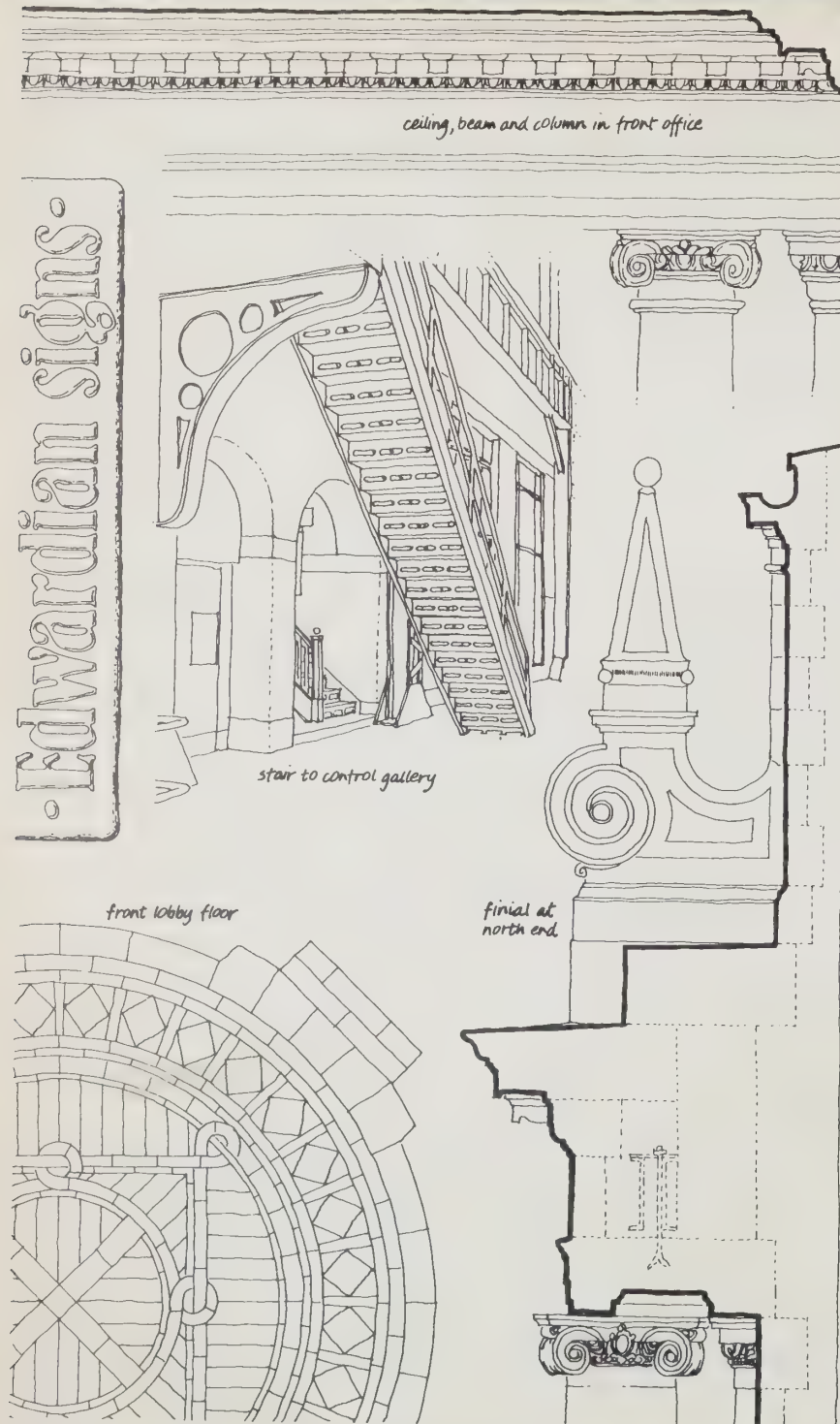
and humanize its overall bulk. This is not gratuitous decoration — these gestures permit recognition of the building and its parts and functions from a distance, and allow people to understand and conduct themselves in unfamiliar buildings by appealing to memories of other buildings and the rules for their construction. Sometimes this appeal is straightforward, sometimes ironic or humorous. Such elements serve several purposes in contrast to the minimally literal or indicative highway sign. The technique of juxtaposing or inflecting these gestures provides an opportunity to multiply the interest and appeal of the rehabilitated works. Such a strategy could:

- display models of equipment not only reduced but in places increased in size, not just to provide directly educational opportunities, but also to act as signifiers or signs designating the general theme presented in that area;
- similarly, use outsize blowups of photographs and drawings to signify certain themes and areas;
- use interior and exterior lighting in a selective manner to highlight public areas, and to reinforce the reading of the building as an electrical monument;
- rebuild the pediment on the river (east) facade, removed in the 1950's, but consider extruding it as as a portico over the inner forebay to heighten the interest of that facade as viewed by the majority of the Falls visitors (that is, from Table Rock and further downstream); and
- use the disposed generator and turbine casings as mileposts along the roads leading to the station.

In using rhetorical devices, there can be some danger of crossing the line into merely trivial and unnecessarily outlandish gestures. But if the risky job is successfully handled and sensitive to the original use of rhetoric in the architecture of the power house, the overall effect will undoubtedly be more powerfully attractive and memorable.



# Edwardian signs



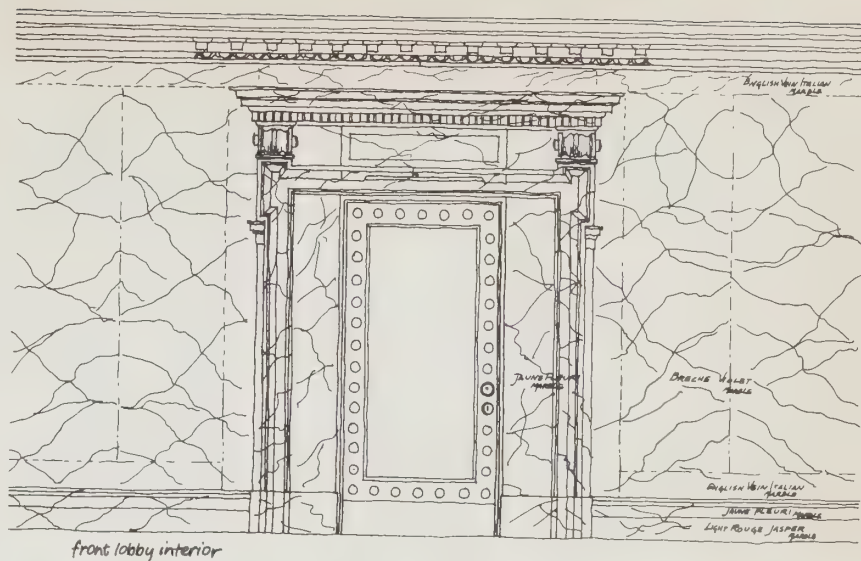
Edwardian building details. Only now, as the beginning of the twenty-first century is almost upon us, are we coming to terms with the post-Victorian architecture of central Canada. One consequence is that we have had little feeling or understanding of the qualities of that architecture, especially of the small details that attract the eye. Details that were modern in 1903 have long been out of use. The successful integration of new elements into the station will require a sensitivity to detail based on close study of the original work. In this case, important details include the glazed brick of the dado (lower) walls of the generating room; the carved stone windows, door frames, columns, pilasters, and ornaments; the artificial Roman stone balustrades and other trimmings; the forms and connections of iron and steelwork in the power house; the uses of different woods and marbles in the reception areas; and in addition those exterior and interior details that once existed (and are documented in drawings and photographs) but which have been removed or obscured over the years. Not that these ought to demand slavish imitation or reproduction, but new details should not clash wantonly with them. For instance, it would be highly inappropriate to introduce the current standard aluminum box-section windows and door frames amidst the grilles and woodwork. Attention needs to be paid, even at the very beginning, to such minutiae, because these things tend to immediately attract the public eye, starved as it usually is in modernist architecture for features that would attract and hold its interest. Such attention would:

- recycle existing windows, grilles, doorways, and interior metalwork where alterations are made;
- develop and use a consistently Edwardian industrial style of signs and lettering, updated to modern display and lighting techniques as necessary;
- use glazed tiles and bricks, in colours appropriate to the building and the era of its construction, on

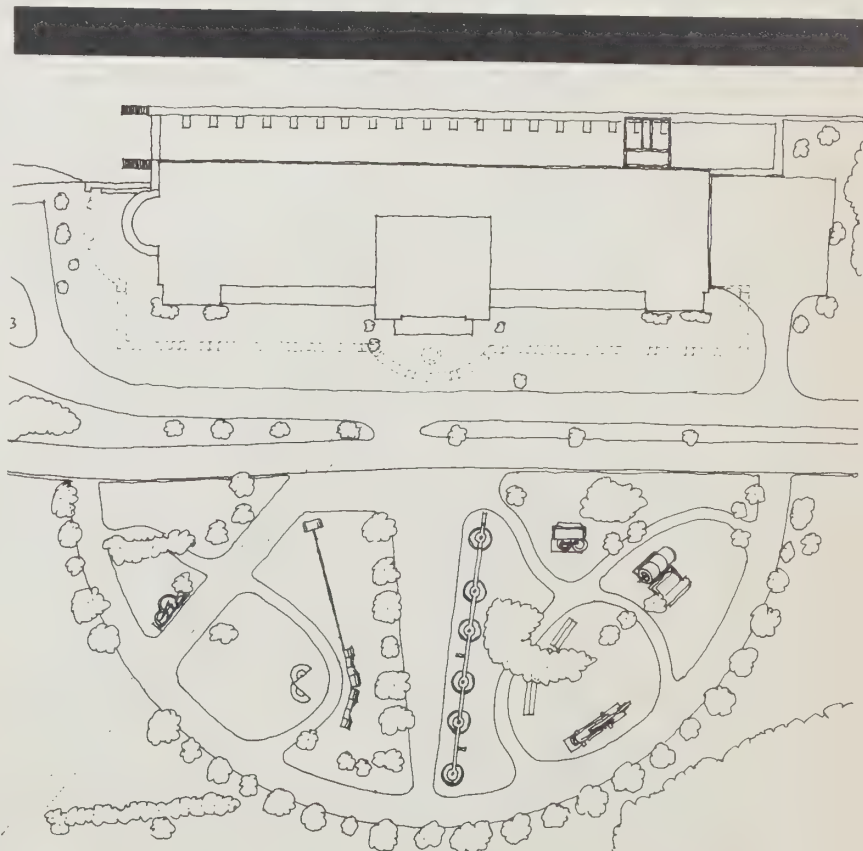


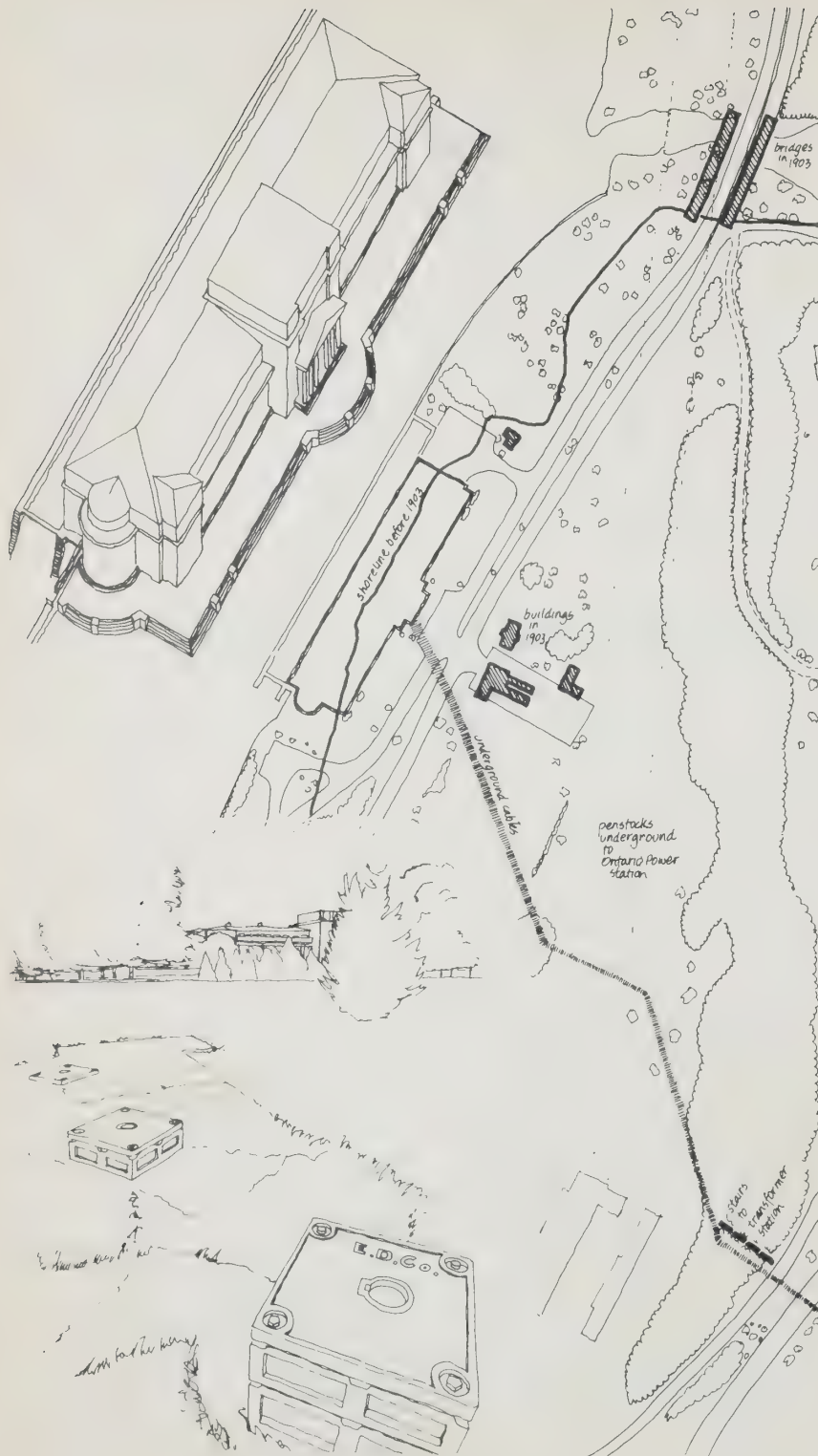
new permanent walls and partitions, including, where fitting, glazed ceramic signs incorporated into their surfaces;

- clean and repoint the carved stonework, and recast the deteriorated Roman stonework on the east (river) facade;
- consider the completion of the stonecarving of the northern and central portions of the principal facade to match the southern end, or short of that or as an interim measure, paint the uncarved portions in the manner of *trompe l'oeil* to resemble the carved work;
- replace the deteriorated or missing plumbing and washroom fixtures with styles and surface materials similar to the originals; and
- make other similar gestures that would provide the impression of care to visible and tactile detail evident in this and other major construction of that period.



**Garden "forecourt".** One of the most important aspects of Beaux Arts architecture and planning, as well as the City Beautiful movement it influenced, was the no less formal character of the public spaces in which individual buildings and formal groups were set. The axial symmetry and formal arrangement of uses and circulation inside major buildings in the academic styles had counterparts in the formal squares and parks of the era. Even the casual and more naturalistic precedent of the English garden was made subordinate to the overall pattern. A formal park could easily be zoned into different casual or geometrically precise parts. Nevertheless, the overall formal character was essential to emphasize the formality of the building facades. In the case of the Toronto Power Station, the building was set off by a paved terrace set several steps above the road and railway in front. Symmetrically arranged on the terrace were large planting boxes and cast iron light standards. Portions of the original paving remain at the front entrance and at the north (apse) end, but





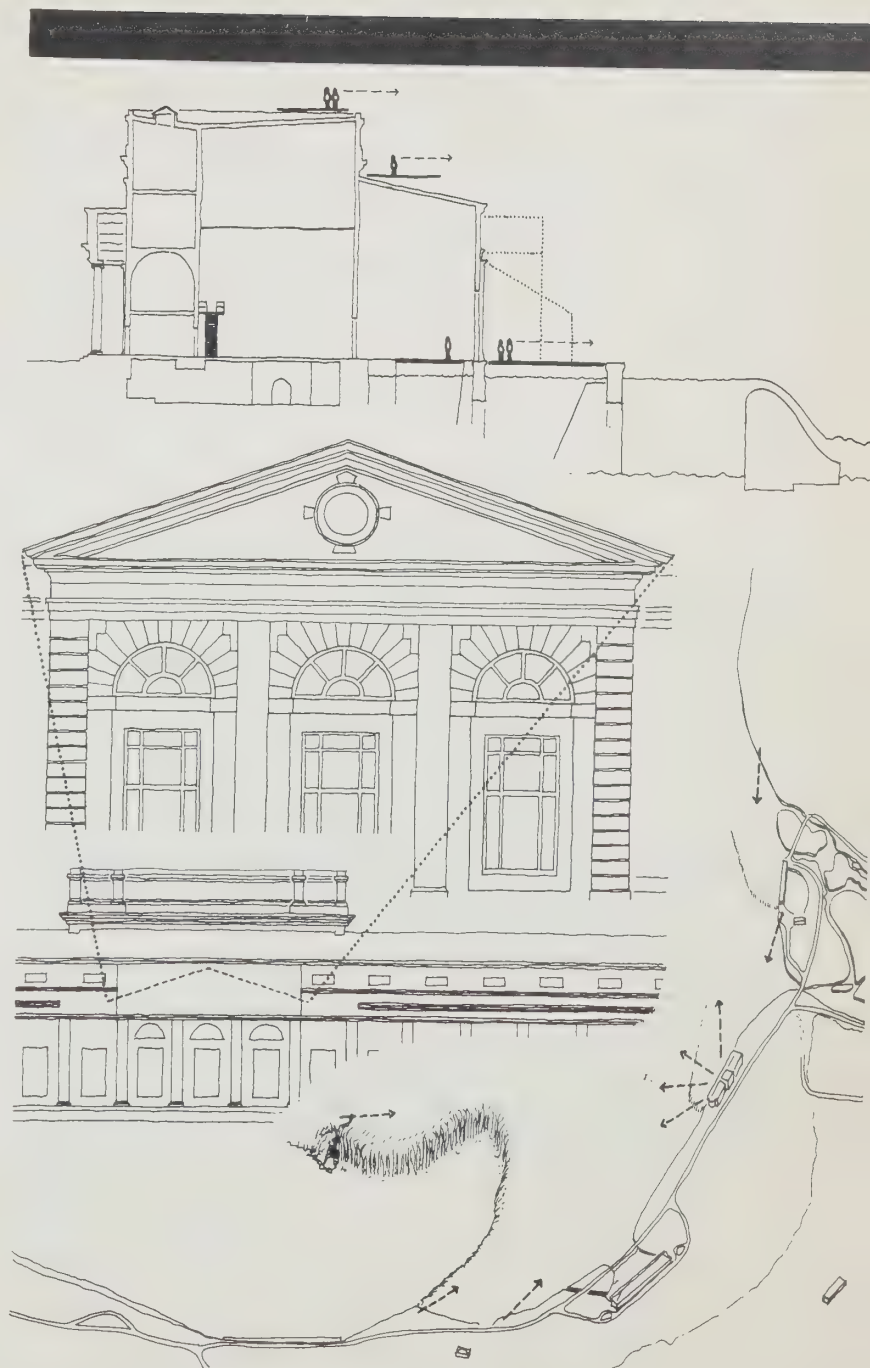
most of the surface is now sodded. Across the road in the park itself, there are traces of the underground conduit through which run the electrical cables to the transformer station on the bluff to the north and west. The traces comprise manhole covers, changes in the otherwise flat relief of the ground, and a staircase and lamps behind the present Niagara Parks Commission works yard. Because the Ontario Power Station's penstocks run beneath this land, most of the open and wooded areas in front of the Toronto Power Station cannot be built upon. Nevertheless, the functional requirements of any public use of the station (especially with regard to car parking), and the opportunities thereby presented for outdoor displays complementing the station and the park might be exploited to enhance the building. A fitting design would:

- ensure that the amount of parking directly adjacent to the station is minimized, and that for any number of spaces, the individual parking areas are small in extent and are separated by parkland or display areas;
- arrange formal walks (straight or curved) to the station from its surroundings, along which would be planting areas, interpretative displays of the station, photographs showing the former character of views from specific viewpoints, pieces of large machinery no longer necessary or useful in the station itself, and connections between the station and the Parks Commission greenhouses;
- determine by documentary and archaeological means the location and disposition of the original industrial sites, dating from 1795, in the vicinity and mark out their outlines on the ground;
- similarly mark the original location of the Niagara shoreline insofar as it can be determined;
- consider the restoration of part or all of the original paved terrace in front of the station and of its planting areas and light standards;
- provide for exterior floodlighting of the station

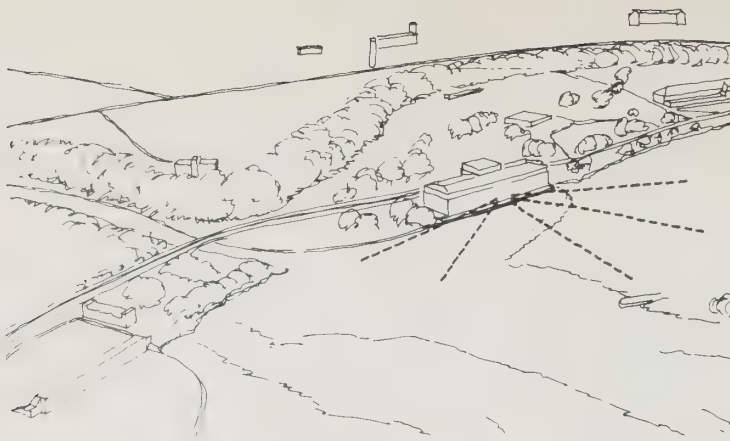
and certain of the displays in the parkland area, or - combine these or similar strategies, which would tie the station into the Niagara Parks system for their mutual enhancement.

**River frontage.** The spectacular site of the Toronto Power Station overlooking the rapids immediately above the Horseshoe Falls created considerable problems for its builders. But now that the power house and its water control works are in place, the spectacular site provides tremendous opportunities, although not without some difficulties. First, the station dominates the view upstream from the Table Rock area adjacent to the Horseshoe Falls. The station can also be seen, weather and spray permitting, from well down the gorge by the Rainbow Bridge. There are several similar views from the Parkway moving downstream from the International Control Dam to the Dufferin Islands. The corresponding views from the station to the north, east, and south are quite interesting in their own right, and together with the overwhelming noise of the river would seem to be a considerable public attraction. At least one element within the rapids, the rusting scow grounded across from the station in 1918, generates a great deal of public curiosity. These characteristics deserve to be taken into account and capitalized upon in rehabilitating and adapting the station. Given the technical difficulties of making use of the water's edge, including high humidity, rapidly moving water and ice, and ice build-up in winter, a design to enhance the utility and interest of that edge would:

- place a floor in part or all of the screen room to provide public access and displays as well as views out the windows to the rapids and beyond;
- place a floor over part or all of the inner forebay to provide outdoor public access and displays as well as views to the north, east, and south;
- consider a glazed enclosure over part of such a terrace over the inner forebay, suitably protected







- from the ice, to provide for year-round use;
- replace the central pedimented facade of the river frontage, either in its original form or extended as part of an enclosure over the inner forebay;
- provide either indoors or outside, orientation devices to describe the features to be seen in views of specific directions;
- provide a viewing platform on the station's roof overlooking the river and Falls;
- floodlight the facades visible from the Table Rock area at night; and
- provide orientation markers briefly describing the building's history and its present use in those areas of the Niagara Parks' riverfront that have views of the station.

### The process of conservation made public

There is one further criterion for the successful adaptation of the station, and it is arguably the most important: the actual process of the station's conservation, the rehabilitation and construction work in progress, must take place incrementally so that it can make adjustments to the possibilities that emerge with time, and, correspondingly, the process must be made visible and accessible to public view and active participation. Such a course has undeniable difficulties and may require rather extraordinary efforts and skills. Nevertheless, there are compelling arguments for making those efforts.

Let us first of all examine the practical implications of this proposition. It means establishing a building programme and corresponding design that are less concerned with the actual end product than they are with a process of design over a long period of time from conception to operation. It means making decisions not at arbitrary deadlines, but at the right times to permit the evolution of design features based on accumulated experience. It means trying very hard not to let the vision of a completed, oper-



57. The inner forebay, early 1907; in the distance, the cofferdam is being demolished.

ating "jewel" of a facility overwhelm the opportunities for enabling the public to participate in its design.

It means providing, with suitable safeguards, direct public access and views to the work in progress; showing in exhibits and progress reports the current intentions of the builders; testing the effect and interest of temporary uses and displays; and actively soliciting local and regional populations for information, advice, and even artifacts for show and study. It means, most of all, drawing the rehabilitated station into the pattern of human activities in its locale and building up a solid attraction over a period of time. At any stage of this progression, the conserved and adapted Toronto Power Station should provide a complete and self-sufficient, even if modest, experience for visitors, a straightforward indication of what is yet to come, and some means for visitors to make known their interests and even be involved in making changes to those plans.

One major factor that must be accommodated in carrying out such a strategy is the need to protect the safety of visitors as well as the project's own workers. In new construction projects, the tradition of the "sidewalk superintendent" is quite strong. There is a considerable attraction in the process of building because it is almost always a non-repeatable event. Even when temporary displays are mounted or dismantled, there are always hangers-on merely watching out of general interest. Because the building process is such a rare occurrence, it has a great potential to attract and maintain public attention throughout its duration. In the case of new construction, safety requirements must limit such onlookers to the margin of site, beneath and behind protective hoardings. But in the case of the conservation of the Toronto Power Station, the basic building structure already exists. This presents the opportunity to permit casual visitors to come inside the building to

watch interior work in progress, so long as appropriate safety measures are taken. The interior height of the generator and screen rooms would permit overhead walkways for visitors to be installed temporarily or permanently, separate from the ongoing activities below, but nevertheless providing important viewpoints.

The other major constraint on such an incremental and publicly accessible approach is the conventional building process, from preliminary design to completion. This is a far more serious difficulty because the usual organization of a major construction job militates against changes once a fixed, carefully drafted design appears on paper. The temptation to stick to this original design in the face of changes during the building process is very great; in practical terms, variations on the construction documents cost extra money. But it is hard to see how any designer will be able to fix all the necessary decisions, large and



58. The plant's construction was a great spectacle in 1905; its renewal can be a similarly attractive spectacle.



small, before any actual construction or modification begins. And even more basic, how will it be possible to determine the public's acceptance and interest in the building's new uses without real opportunities to try them out? Fixing the ultimate pattern of forms and uses and the corresponding construction process at the very beginning would not only pre-empt important, exciting opportunities to enhance the station's near- and long-term success as a public attraction and asset. Worse, such grand plans would turn away the public during those months and years of work, with no guarantee of a result that will please anyone beyond the casual one-time visitor. This project must not be a case of simply marketing a completed attraction, but rather of developing a genuine public resource. Thus it is vital that planning, adaptation, and construction be broken down into small designs, small increments of expenditure and small contracts. The construction process must respond productively to the gradual evolution of the mating of new uses to existing building.

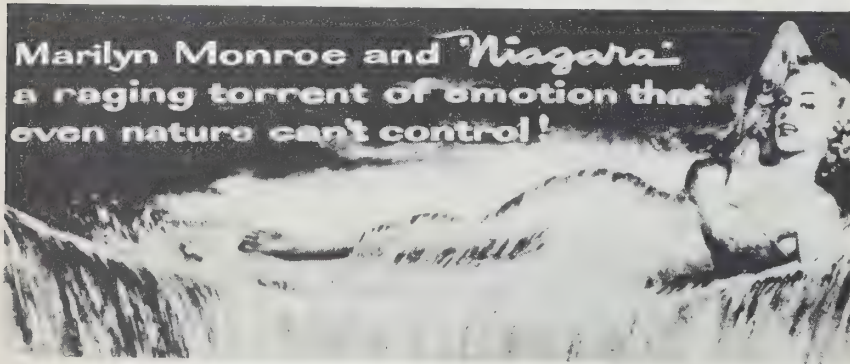
It is beyond the scope of this essay to specify exactly how to overcome these constraints, but it is clear that with sufficient ingenuity and organization such conditions can be, and have been, overcome. Incre-

mental and participatory planning, design, and development are by no means new processes. They have proven successful in many places where there have been both the opportunities for special interests to become involved, and the necessary tools, ideas, and challenges provided by their organizers.<sup>17</sup> At Niagara Falls there exist several special opportunities and challenges for just such an approach to Toronto Power's rehabilitation.

There is a long tradition of spectacular, if generally discreditable, performances and stunts at and near Niagara Falls. That the tightrope walkers, stunt flyers, and barrel riders have caused great public sensation is without doubt. Even inadvertent adventures such as the 1918 grounding of the scow in the rapids near the Toronto Power Station and the tragic 1912 breakup of the ice bridge beneath the Falls have become part of the publicized history of the place.<sup>18</sup> The Falls themselves are the major attraction, but once having reached the awesome torrent, most visitors apparently crave other diversions. Thus the spate of commercial entertainments at Niagara Falls that have annoyed right-thinking authorities and alternately amused and bored millions of visitors from the early 1800's until today. These entertainments seek either to give different views of the Falls than were possible before (the latest is an immense Ferris Wheel), or to provide a complete diversion altogether (wax figures and trained dolphins are apparently most popular). The Toronto Power Station revitalization project provides an occasion to accommodate both a new and different viewpoint of the Falls and vicinity, and a less spectacular but probably more lasting educational and cultural diversion. And its attraction would provide a modest boost to the off-season interest of the Falls area.

Almost every visitor to the Niagara Parks enjoys and appreciates the high quality of the landscaping and its care. Indeed, the Parks Commission's School of

59. The melodramatic Niagara — the romantic image of the commercial (and cinematic) promoters.



courtesy of Twentieth Century-Fox



Horticulture serves both to train the required people for this work and to display their handiwork to the public. These functions have been successfully combined since 1936. The Toronto Power Station provides the potential to not only make an equally successful symbiosis, but to extend the public role from spectator to participant. The park is skillfully managed but this management is necessarily remote. The station's rehabilitation can give the visiting public and local residents the chance to become involved in the creation and operation of a new asset in the park, to participate in a genuinely productive activity, to make their own modest imprint, and to spend more time in the area, especially outside of the summer high season. The practical benefits of building up a corps of actively interested visitors into volunteers and even permanent staff over a period of time are inestimable.

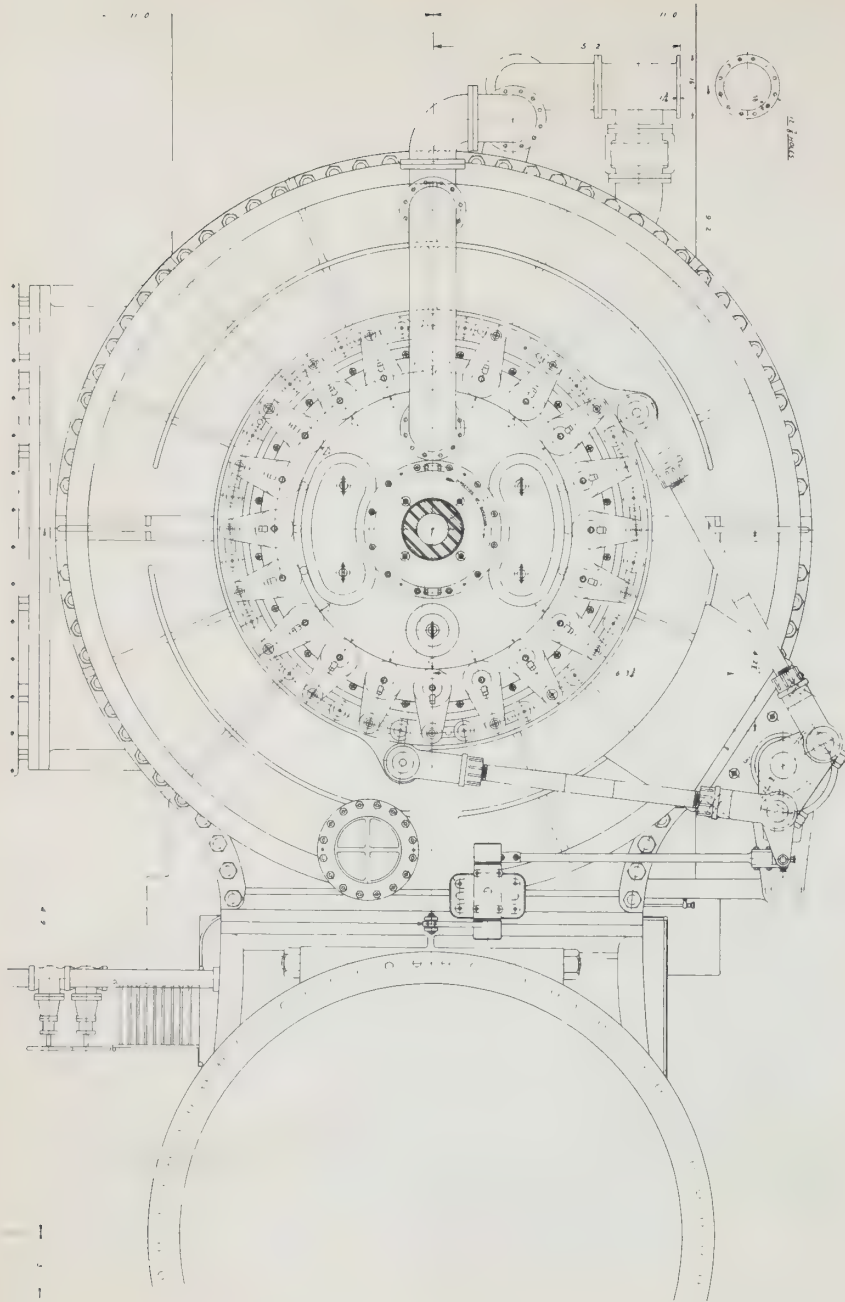
Of course, the evolution of the station's ultimate uses over time rather than all at once will enable changes in the concept and definition of its adaptation. These should not only respond to the general level of interest of the public (as reflected in, say, attendance figures), but perhaps even more so to the emergence of special interests, new information, new techniques of display and interaction, and to the changing perspectives of history with the passage of time. This also has its pragmatic corollary in the evening out of expenditures for development over a long period and the consequent lessening of the risk of that capital being poorly invested.

The case of the Toronto Power Station illustrates the immense potential that active heritage conservation might have. The process of revitalizing its important architecture and engineering characteristics and endowing them with new uses and human significance can make the renewed station not only a successful landmark in local terms, but also an important exemplar for such conservation efforts



around the world. There exists a great deal of practical evidence to show how important it is to use the building process to enhance social and cultural understanding, well-being and satisfaction.<sup>19</sup> And there exist as well numerous organizational techniques for bringing these objectives to the construction of better, more economic, and more useful public and private buildings, public spaces, and indeed entire towns and cities.<sup>20</sup> These experiences and techniques are no less important to the repair, rehabilitation, and re-use of existing buildings, spaces, and towns. The success or failure of the conservation of the Toronto Power Generating Station will depend on how well this knowledge of theory and practice can be brought to bear on the conservation process: the making of a private monument to capital, industry, and ambition into a public monument to community pride, learning, and delight.

60. The down-to-earth Niagara – the Niagara Parks Commission's expanded greenhouses and the parking encroachment onto a former garden.



## Notes

1. Mark Fram, *Ontario Hydro, Ontario Heritage*, Toronto, Historical Planning & Research Branch, Ministry of Culture & Recreation, 1980.
2. *ibid.*, pp. 84-101.
3. Mark Fram, *Report on the historical background and current status of the Toronto Power Generating Station at Niagara Falls*, Toronto, Historical Planning & Research Branch, Ministry of Culture & Recreation, 1978, pp. 11-12.
4. Ronald Way, *Ontario's Niagara Parks*, Niagara Falls, Niagara Parks Commission, 1960.  
H. V. Nelles, *The Politics of Development*, Toronto, Macmillan, 1974, pp. 32-36, 218-220.
5. *Visitor's Guide to Ontario's Niagara Parks*, Niagara Falls Heritage Foundation, 1979, pp. 12, 15, 22.
6. H. V. Nelles, *op. cit.*, pp. 216-247.  
C. A. S. Hall, *Electrical Utilities in Ontario under Private Ownership, 1890-1914*, unpublished PhD. thesis, University of Toronto, 1968, pp. 52-100.
7. *ibid.*, pp. 53-56, 60-68.
8. E. B. Biggar, *Hydro-Electric Development in Ontario*, Toronto, Biggar Press, 1920, pp. 88-90.  
C. A. S. Hall, *op. cit.*, pp. 95-100.
9. E. B. Biggar, *op. cit.*, pp. 93-100.
10. H. V. Nelles, *op. cit.*, pp. 237-303.
11. *ibid.*, pp. 362-375, 405-407, 466.

12. Thomas P. Hughes, "The Electrification of America: The System Builders," *Technology and Culture*, v. 20, n. 1 (January, 1979) pp. 126-127.

J. A. Fleming, *Fifty Years of Electricity*, London, The Wireless Press, 1921, pp. 238-239.

C. A. S. Hall, *op. cit.*, pp. 23-36, 252.

13. "Electrical Development Co.'s Power Plant", *Construction*, October 1909, pp. 46-51.

"The Niagara Power Plant of the Electrical Development Company of Ontario", *Engineering News*, LIV, 19 (November 9, 1905), p. 477.

H. V. Nelles, *op. cit.*, p. 219.

Geoffrey Broadbent, "Neo-Classicism", *Architectural Design*, v. 49, n. 8-9 (1979), pp. 4-7.

William Chaitkin, "Roman American", *Architectural Design*, v. 49, n. 8-9 (1979), pp. 8-15.

G. H. Edgell, *The American Architecture of Today*, New York, Scribners, 1928, pp. 42-52, 289.

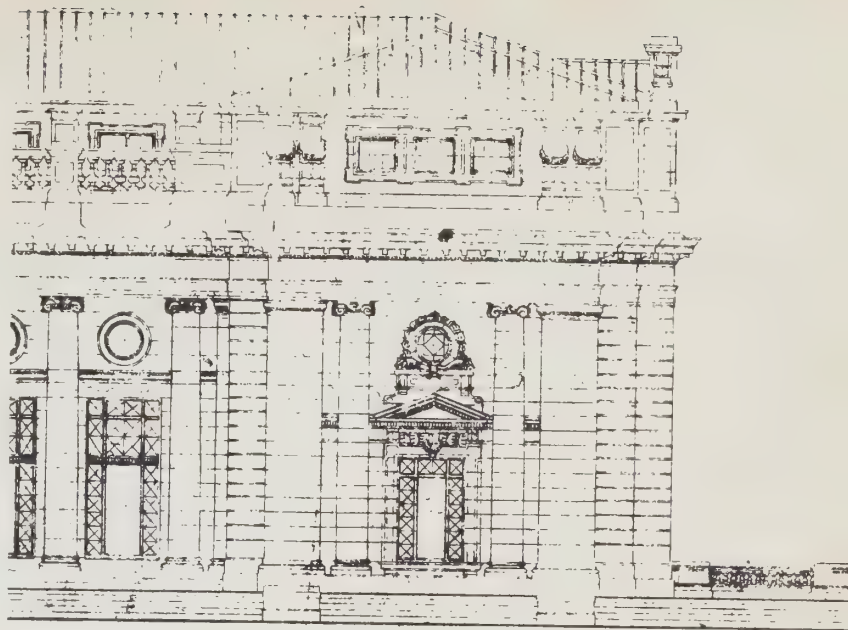
Albert Rosengarten, *Handbook of Architectural Styles*, London, Chatto and Windus, 1889, p. 373 *et seq.*

14. J. Carr, A. J. Fisher, and V. D. Srivastava, "Feasibility Study for the Sandford Fleming Engineerium", Sandford Fleming Foundation, 1980.

15. "Consultants' Reports used in the Feasibility Study for the Sandford Fleming Engineerium", Sandford Fleming Foundation, April 1980.

16. Amos Rapoport, *Human Aspects of Urban Form*, Oxford, Pergamon, 1977, pp. 178-247.  
Kevin Lynch, *What Time Is This Place?*, Cambridge, Mass., MIT, 1972.

17. D. Engel, *et al.*, *The Campus as the Campus Centre: A Manual*, Toronto, Students' Admin-



istrative Council, University of Toronto, 1971.

Christopher Alexander, *et al.*, *The Oregon Experiment*, New York, Oxford University Press, 1975.

*Process: Architecture*, no. 3 (1977) — "Community Design: By the People."

18. *Visitor's Guide to Ontario's Niagara Parks*, *op. cit.*, pp. 20, 33-35.

19. A. Rapoport, *op. cit.*, pp. 368-384, and bibliography, pp. 385-419.

20. Christopher Alexander, *The Timeless Way of Building*, New York, Oxford University Press, 1979.

*Process: Architecture*, *op. cit.*

K. Lynch, *op. cit.*







# **The forgotten Newmarket Bridge**

A case for the importance of historical  
research in planning

Marilyn Miller

2. Under the bridge on  
flood prone Holland River,  
1979.





## Introduction

Many historic structures are demolished in Ontario every year, a permanent loss both for the living and for future generations. One of the major factors contributing to this continuing loss is that many people are not aware enough about old buildings to make a fuss when they are torn down. Canada is seen as a young country whose tradition is innovation, growth, and development, rather than continuity with the past. We have a wealth of history at our doorstep that often goes unnoticed. Many heritage buildings have been lost because their importance was not recognized and the structure not remembered. This almost happened to an historic reinforced concrete arch railway bridge in Newmarket, Ontario. Fortunately, the importance of the structure was recognized in time to save it.

The Newmarket bridge ceased to be used almost fifty years ago when the Metropolitan Street Railway Company, based in Toronto, ceased operations. The electric powered trolley line was closed down, the track pulled up, and the electric lines removed. Earth fill eroded from around the concrete arch bridge and it was slowly surrounded by vegetation. The bridge had been forgotten for many years, when in November of 1978 it was announced in a local newspaper, the *Newmarket-Aurora Era*, that the South Lake Simcoe Conservation Authority planned to demolish the structure, along with a neighbouring wooden bridge, as part of its scheme to deepen and straighten the Holland River to facilitate flood control.

Conservation authorities were established in Ontario in the late 1930's and early 1940's to lessen the effects of floods, droughts, and erosion by controlling and managing watersheds. They are mainly concerned with hydraulic engineering projects such as dams and reservoirs but they also have extensive

land holdings that are often used for recreation. As planners, developers, and managers of watersheds, the conservation authorities have a significant impact on the man-made heritage of the province. Waterways and water supplies were important determinants of the location of prehistoric and early historic settlements, and consequently many of these sites are found in areas affected by conservation authority undertakings. Also, many waterside buildings and structures with industrial and engineering heritage value, especially those associated with early transportation, power, agriculture, forestry, mining, manufacturing, and utilities, are owned and managed by conservation authorities. For example, the South Lake Simcoe Conservation Authority owns, in addition to the Newmarket bridge, three local structures and a swing bridge, the latter associated with the ill-fated Newmarket Canal scheme attempted during the early part of this century.

A Newmarket resident first reacted to the notice of demolition of the old railway bridge. This gentleman had been concerned for some years about the loss of historic landmarks in his home town and in December 1978 he circulated a petition to rouse public opinion in support of the preservation of the bridge. Staff members of the Historical Planning and Research Branch became involved in January 1979 after the Ontario Ministry of Culture and Recreation was contacted both by the concerned resident and by the South Lake Simcoe Conservation Authority. The Resource Manager for the Conservation Authority asked the Historical Planning and Research Branch to assess the status and importance of the bridge as part of Ontario's heritage. It was necessary to get this information as quickly as possible because demolition was scheduled to commence in a month's time.

Most local residents were unaware of the bridge's history and its significance as part of Ontario's heri-



3. Location, Newmarket Railway Bridge, map reference 31D/3, 3MCE series A751.

tage. Indeed, many were unaware of the bridge altogether. The historical importance of the bridge was not considered when plans were developed to improve the river channel. As a result, when the significance of the bridge was discovered, the Conservation Authority was virtually committed to a plan that required the removal of the structure.

Historical Planning and Research staff were interested in the old bridge as an example of Canadian engineering heritage and suspected that the bridge represented an innovation in design at the time of its construction. It was also felt that the bridge could provide an interesting local landmark or monument for the citizens of Newmarket; it is located in an area eventually slated to be a park. A decision was made to research the bridge's history within the time left before the date set for demolition.

Through the expeditious examination of available documentary evidence and soliciting expert opinion, it was soon determined that the bridge was of special significance as part of Canada's engineering heritage. The reasons for this were many. The bridge was associated with an historically important electric railway line; it is a good example of the early use in Canada of reinforced concrete and the functional, modern style of design in bridge building; it was designed by a well-known Canadian civil engineering firm; and, as a survivor of its kind and time, it is a rare feature in the Ontario landscape.





4. Obscured by trees, the bridge was barely visible early in 1979.





5



6

5&6. In its heyday, the bridge was used both for freight and passenger traffic.

## The history and significance of the Newmarket Bridge

There was once an extensive electric railway system in Ontario that connected urban centres with the surrounding countryside. These railways connected with trolleys or street railways in major cities and provided inter-urban transportation in the years between 1870 and 1920 before being supplanted by the gasoline-powered automobile and bus. The electric railways, or “Radials” as they were often called, radiated from the major cities and towns and were a primary factor in the development of commuter suburbs and dormitory communities in the years before the First World War. Most of the rail lines are gone now: their tracks have been torn up and their stations have been closed. In cities such as Ottawa and Kingston most people are unaware that a street railway line ever existed; while in Toronto, the once vast electric railway network has shrunk to a few street car lines within the city.

The Newmarket bridge is a remnant of one of these so-called radial lines, the Metropolitan Street Railway. The railway company was incorporated in 1877 and was gradually extended as a horse-car line up Yonge Street to Eglinton Avenue (1885).<sup>1</sup> The line was electrified in 1889 and reached York Mills in 1890. It took on inter-urban status in 1896 when it replaced a stage-coach line to Richmond Hill. In 1899 the line was extended to Newmarket. Its route adjoined Yonge Street for most of its distance and passed a chain of suburban villages and country residence districts as well as the Town of Aurora.

The *Canadian Electrical News* reported in December of 1899 that the extended system, “presents many interesting features . . . the unusually heavy grades encountered, [and] the method of generating and distributing the current which we believe represents an entirely new practice in street railway operation

in Canada.”. A new power house, halfway up the line at Bonds Lake, produced electricity from steam and supplied power to the entire line.

Control of the railway was acquired by Sir William Mackenzie in 1904, and the line became a part of the Toronto and York Railway Company (chartered 1898). Shortly afterward, plans for extensions were developed and, on June 1, 1907, a high speed private right-of-way line opened from Newmarket to the Resort, Jackson’s Point, on Lake Simcoe. By 1909 the line had been extended another two miles into Sutton.

The primary traffic of the line consisted of suburban travellers to Richmond Hill and intermediate points, and holiday-makers travelling to Lake Simcoe. “To a whole generation of Torontonians the most favoured summer weekend trip was on the Metropolitan to Lake Simcoe . . . The line experienced a phenomenal growth in passenger traffic over the years . . . For many years it had the greatest traffic of any intercity electric road in Canada.”<sup>2</sup>. Freight, primarily car load interchange business with the CNR, was also important. In addition, substantial milk traffic was handled, and trainloads of ice were brought down from Lake Simcoe in the winter months.

When the line was extended from Newmarket to Jackson’s Point in 1907 a long iron trestle bridge was constructed in Newmarket to carry the line over the Grand Trunk Railway and the Holland River. The bridge was 800 feet long and included a plate girder span of 82 feet, over the G.T.R., resting on concrete piers. The trestle was of wood with a wooden Howe truss span of 50 feet in the middle over the Holland River.<sup>3</sup> The iron bridge was ordered from the Canadian Bridge Company and transported via the Grand Trunk Railway on the three flat cars.<sup>4</sup>

During the months after completion of the bridge a cave-in occurred on the west side of the bridge where it crossed the river. Examination revealed that the log abutments had rotted away, and tenders were asked for a cement abutment to replace it.<sup>5</sup> It is probable that the concrete arch now spanning the Holland River at this point was constructed to solve this problem. This bridge was built in 1909 and replaced one section of the trestle bridge. When it was built it was one of the first reinforced concrete arch bridges in the country.

The reinforced concrete arch bridge originated in Europe in the 1880’s, an invention of “French theorists and Swiss engineers”.<sup>6</sup> The design was first used in Canada 25 years later. In 1885, the French had built small reinforced arches on the Monier system. Wire mesh reinforcing was embedded in the concrete and bent on a curved surface approximating that of the soffit or under-surface of the arch.<sup>7</sup> Ernest L.

7. Alvord Lake Bridge, Golden Gate Park, California, 1889, Ernest L. Ransome, engineer, first reinforced concrete arch in America.





Ransom built the first reinforced concrete arch bridge in America in 1889.<sup>8</sup> This bridge, located in Golden Gate Park, San Francisco, had a span of 20 feet and a rise of 4 feet 3 inches. The reinforcing was provided by twisted iron bars embedded longitudinally in the concrete and bent in the same curve as the soffit.

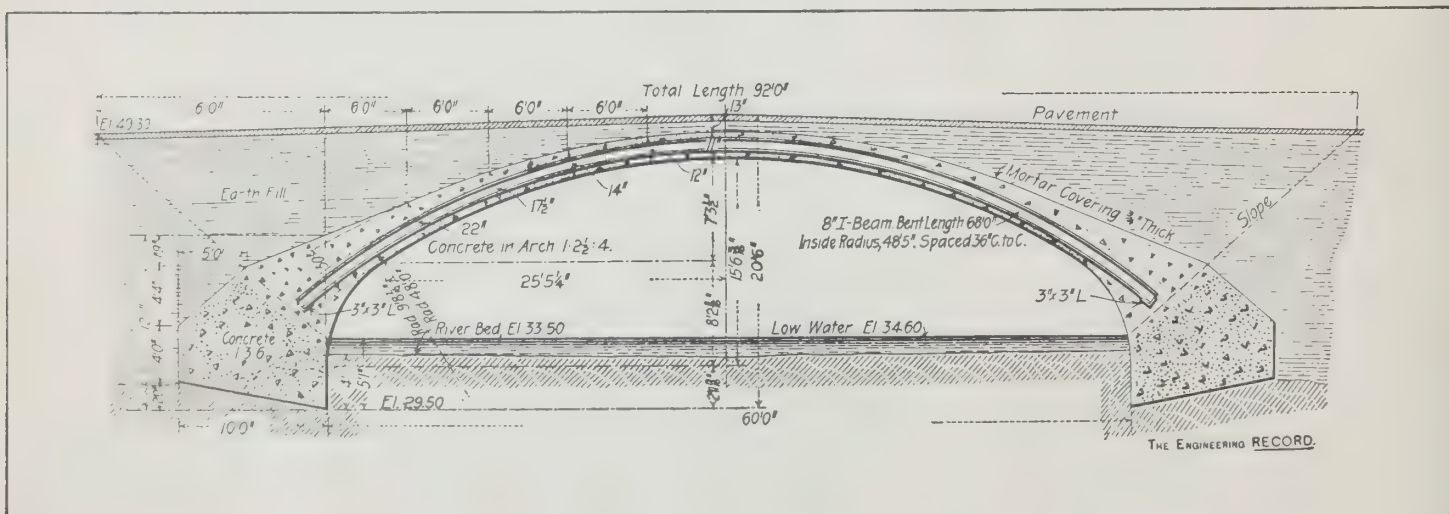
The real beginning of reinforced concrete arch bridge construction in North America came in 1894 with the introduction of the "Melan" system that used a series of parallel iron or steel I-beams curved to the profile of the arch soffit. This system effectively combined the iron arch rib with the masonry arch.<sup>9</sup> The Newmarket bridge appears, from the outside at least, to be very similar to an example of this type of construction, the Franklin Bridge, Forest Park, Missouri, built in 1898.

By the turn of the century in the United States, many reinforced concrete arches were being constructed as small rail and highway spans. It took several more years before the construction method was wholeheartedly adopted by Canadians. In the

1880's concrete was still regarded as a material to be used with great caution; for example, as late as 1898 concrete was not allowed to be closer than 20 feet to the surface of the water in the substructure of the Alexandria cantilever bridge over the Ottawa River at Ottawa,<sup>10</sup>

"As a material for bridge construction, concrete made no appreciable impression on Canadian engineers until about 1907. Very properly, they proceeded with caution".<sup>11</sup>

The first reinforced concrete arch bridge of appreciable size erected in Canada appears to have been a 92-foot earth-filled span in Massey, Ontario, built in 1906.<sup>12</sup> Another, with a span of 116 feet, was constructed at Lyndhurst in 1908. These were most likely prototypes in their time, for the Canadian Society of Civil Engineers reported in 1908 that, "only a few years ago we knew practically nothing of reinforced concrete"<sup>13</sup>, and in 1909 it was reported in the *Canadian Cement and Concrete Review* that "it is only within recent years that concrete has been used extensively in bridge construction."<sup>14</sup> The



8. "Melan" system — Franklin Bridge, Forest Park, St. Louis, Missouri; longitudinal section.



Newmarket bridge was built in 1909 during these first years of reinforced concrete bridge construction in Canada.

The Newmarket bridge was designed by Barber and Young, one of the most successful and innovative civil engineering firms in the country.<sup>15</sup> Barber and Young pioneered the use of reinforced concrete in Canada. In 1909 they built the first concrete truss bridge in the country, and one of the first in North America, over the Etobicoke River on the Middle Road between Peel and York Counties.<sup>16</sup> They also built what was probably the first open spandrel concrete arch in Canada in 1910 at Weston, Ontario.<sup>17</sup>

In 1911, C.R. Young left the firm to embark on a distinguished teaching career at the University of Toronto. He became Head of the Department of Civil Engineering and, in 1941, Dean of the Faculty of Applied Science and Engineering. Young was also a member of an international board that judged the feasibility of the Ambassador Bridge built at Windsor-Detroit.

Frank Barber had an equally distinguished career as a bridge designer. In 1921, Frank Barber designed the Ashburnham Bridge at Peterborough, "one of the outstanding concrete bridges of Canada for structural and architectural merit".<sup>18</sup> It was for many years at 234 feet the longest span in Canada. Barber also designed one of the most important continuous (a span going over more than one pier) bridges in reinforced concrete, at Lambton, Ontario, in 1928.<sup>19</sup>

The Newmarket bridge is an excellent example of the Barber and Young design. The beautiful parabolic arch was designed to incorporate the very high embankment necessary for the crossing of the Grand Trunk Railroad tracks. The arch had a clear span of 50 feet and a rise of 23 feet. The height of the roadway above the water was 27 feet. The abutments



9. Massey Bridge, Massey, Ontario, 1906; one of the first reinforced concrete bridges in Canada.

were 94 feet wide at the springing line, but the arch narrowed to 21 feet at its crown where the thickness of the arch was 1 foot 6 inches. Earth fill was used to build up the grade of the bridge, which was essentially a curve of concrete over laid with earth. The bridge was designed for a load of 5,000 pounds per linear foot. The contractors were O. L. Hinks and Son, Humber Bay, Ontario.<sup>20</sup>

The Newmarket bridge is an excellent and early example of the modern functional style of engineering design that integrates form, function, and materials. The unadorned concrete is not made to look like a more traditional building material; early concrete arches were often made to look like cut stone. Its curving arch calls to mind modern sculpture. Treatment of concrete in ways appropriate to its continuity and elasticity began to appear first around the turn of the century in small rail and highway spans.<sup>21</sup>

10. Middle Road Bridge over the Etobicoke Creek, Ontario, 1909, Frank Barber and C. R. Young, engineers; the first concrete bridge in Canada.

# Canadian Cement and Concrete Review

Vol. 3.

TORONTO, NOVEMBER, 1909

No. 11

## A New Departure in Bridge Construction.\*

A CONCRETE TRUSS BRIDGE ON THE MIDDLE ROAD BETWEEN YORK AND PEEL COUNTIES, ONT. OFFICIALLY OPENED TO TRAFFIC THIS MONTH THE FIRST OF ITS KIND TO BE ERECTED IN CANADA.

The architect says with truth of the bridge engineer that he aims only at results which are useful and seems the beautiful. The general form of a steel truss is often decided upon with no thought of aesthetic design, and a few dollars afterwards spent on ornamental railings or other details will never remedy the defect. And yet mathematics and aesthetics go hand-in-hand, and a simple steel truss with the upper panel points lying on the singularly graceful curve, the common parabola, can be designed with more economy of material than the

this month. An examination of it will show that the maximum stress in the lower chord is the same for all its members, consequently the same number of steel rods are used from one end of the chord to the other—a great advantage in construction.

The vertical members of the web system are tension members, and the diagonals are of the nature of counter-braces, carrying no stress for live load covering the entire floor or from the dead load, and acting alternately in compression and in tension for a moving load.



A Truss Concrete Bridge on the Middle Road, between the Counties of York and Peel, Ont.

unsightly steel truss with parallel chords. If the cost of the former would be greater under present conditions, then shop practice and facilities are principally to blame. But shop practice is no bugaboo to the designer in concrete, and the form of truss which is the most economical is also the one which is the most natural and the most beautiful. The massive and gracefully arched compression chords are, perhaps, the most notable features of the few concrete truss bridges which have as yet been built.

The seven-panelled parabolic bowstring truss, illustrated above, was built on the Middle Road, between the counties of York and Peel, and officially opened to traffic

\* By Frank Barber, of Barber & Young, bridge and structural engineers, Toronto, Ont.

The compression chord, 22 in. by 24 in. at the middle segment, is only slightly reinforced with twelve rods,  $\frac{1}{2}$ -in. round, and bonded with smaller rods spaced 6 in. apart, except at the panel points, where somewhat elaborate detailing is resorted to in order to make the bond perfectly secure between the hangers and the chord. The maximum compressive stress for this chord is 430 pounds per square inch for the concrete and 6,450 pounds for the steel, or about 500 pounds per square inch for concrete and steel acting together.

The maximum tension in the lower chord is 16,000 pounds for the steel, the concrete not being considered to act in tension.

In order not to cause internal stress in the concrete by some of the rods not being straight at the time

The Newmarket bridge may be one of the few remaining early reinforced concrete bridges in Canada and one of the last of Barber and Young's innovative designs. The bridge was abandoned when use of the electric railway line was discontinued in 1930. Its earth fill and the railway tracks and electric lines have all disappeared, as has the trestle bridge over the Grand Trunk Railroad tracks.

Reinforced concrete bridges used as roadways have a limited life span of 50 to 60 years. The concrete is subject to stress, cracks, and the corrosive action of salt. However, the Newmarket bridge, because it was only used for 23 years, is still in fine structural condition. Also, many of the bridges mentioned above have been replaced by wider structures. Barber's famous "Middle Road" truss bridge, for example, was torn down in 1932 because it was too narrow.<sup>22</sup> The Ministry of Transportation and Communications report that there are few, if any, reinforced concrete bridges constructed before 1920 still in operation. Even bridges from the 1920's and '30's may have been repaired so many times that their original form has been lost. The Newmarket bridge is therefore of particular value as a part of Canada's engineering and industrial archaeological heritage. It is also one of the few remaining features associated with the Metropolitan Street Railway.

### Historical research and the conservation of the Newmarket Bridge

After a report on the history and significance of the Newmarket Bridge was completed, staff of the Historical Planning and Research Branch met with the South Lake Simcoe Conservation Authority and members of the Newmarket Town Council. A case for the national significance of the bridge was made, and its retention as a landmark or monument within the proposed urban waterway park was recommended. Local awareness and interest in the bridge also



11



12

began to grow as the *Newmarket-Aurora Era* made the contents of the research report known to its readers.

The Conservation Authority showed a commendable willingness to consider the importance of the bridge as a heritage resource; however, the Authority was still primarily concerned with initiating its flood control scheme and somewhat wary of spending the extra money necessary to preserve the structure. Ultimately the Town Council had to decide whether to allow demolition.

11. Newmarket Railway Bridge, Newmarket, 1909, Frank Barber, C. R. Young, engineers.

12. Ashburnham Bridge Peterborough, Ontario, 1921, Frank Barber, engineer; the largest concrete arch span and the first use of temporary hinges in Canada.



The issue came to a head when the story of the bridge received national coverage on the C.B.C's Ombudsman programme. It was revealed on this programme that it was not the reinforced concrete arch but the wooden bridge upstream that could cause water to back-up during flood conditions. In several newspaper articles, local politicians and newspaper reporters began what was in effect a public examination of attitudes toward the bridge and the relative costs and benefits of preserving it. The attitudes expressed in these articles revealed a practical approach and a willingness to preserve the bridge for its historic value. One local reporter asked "Why not just leave the old arch as it is?"— and questioned why money should be spent to tear it down.<sup>2 3</sup>

It hasn't cost us any money which should make us happy, and the arch which has stood alone and ignored for 75 years can continue to sprout growth and be a source of wonder for anyone who happens to see it and wonder, 'What the h--- is that?'"<sup>2 4</sup>

In another article it was suggested, "For years now, town councils have been promising to develop a park along the Holland River. What better place to start?"<sup>2 5</sup> Town councillors voted to leave the bridge standing, and the Mayor stated it was, "a waste of taxpayers' money to tear it down,"<sup>2 6</sup> and suggested that once the wooden bridge came down no further action would be necessary.

The South Lake Simcoe Conservation Authority then produced a plan to preserve the bridge by cutting down the bank around it to allow the river to flow under and around the arch during "100-year flood conditions". The extra costs involved, quoted as \$37,291.60, were shared one-third by the Town and two-thirds by the Conservation Authority. It has not been estimated what the cost would have been had the importance of the bridge been recognized earlier in the planning process and a second design not been necessary.

A "passive area" park was created around the bridge and in May 1979 the *Newmarket-Aurora Era* reported, "The Arch Park is virtually finished . . . Visitors won't be allowed at the new park for about three weeks so the new sod can get settled down on the steep slope created by work to save the historic concrete railway arch." The South Lake Simcoe Conservation Authority, Town Council, and interested citizens must be given credit for their enlightened and generous approach to this planning issue.

The once forgotten bridge is now an important point of interest in the town of Newmarket, "as famous as the golden arches of that fast food chain".<sup>2 7</sup> With the erection in 1981 of a proposed provincial historical plaque by the Ontario Heritage Foundation, an agency of the Ministry of Culture and Recreation, no one should ever again have to ask, "What the h--- is that?"



13. Earth fill was removed from one side of the bridge to accommodate 100-year flood conditions, 1979.



14. The "Arch in the Park",  
Newmarket, 1979.

The following people were consulted on the research-project:

Elman Campbell, local historian, Newmarket.

Dr M.F. Cheung, Senior Research Officer, Transportation, Public Works, Canada, Ottawa.

Marilyn Dick, Reference Librarian, Public Works, Canada, Ottawa.

Michael Holowka, Ministry of Transportation and Communications, Project Research Officer, Engineering Research and Development Branch, Toronto.

Robert F. Legget, Historian, Ottawa.

William McClure, Resources Manager, South Lake Simcoe Conservation Authority.

John Mills, Chairman, Ontario Historical Electric Railway Association Toronto.

Dr James Peterson, Institute of the History and Philosophy of Canadian Science and Technology, Toronto.

Thomas Ritchie, National Research Council, Division of Building Research, Ottawa.

Watson Sweezie, Newmarket resident.



## Notes

1. The following section closely follows John F. Due, *The Intercity Electric Railway Industry in Canada*, University of Toronto Press, 1966, pp. 6, 82-84.
2. *ibid.*
3. *The Railway and Marine World*, June 1907.
4. *The Newmarket Era*, May 17, 1907.
5. *ibid.*, June 14, 1907.
6. Carl W. Condit, *American Building Art*, 19th Century, Oxford.
7. *ibid.*
8. *ibid.*, p. 248.
9. *ibid.*, p. 249.
10. C.R. Young, "Bridge Building", *Engineering Journal*, Vol. 20, Number 6, June 1937, p. 478.
11. *ibid.*, p. 490.
12. *ibid.*, p. 491.
13. *Transactions of the Canadian Society of Civil Engineers*, 1908, p. 320.
14. *Canadian Cement and Concrete Review*, Vol. 3: Number 11, August 1909, p. 199.
15. *The Canadian Engineer*, Vol. 18: Number 8, February 25, 1910, p. 180.
16. *ibid.*, p. 184.
17. *Canadian Cement and Concrete Review*, Vol. 3: Number 11, November 1909, p. 273.
18. C.R. Young, *op. cit.*, p. 492.
19. *ibid.*, p. 496.
20. *The Canadian Engineer*, *op. cit.*, p. 182-183.
21. Carl W. Condit, *op. cit.*, p. 253.
22. C.R. Young, *op. cit.*, p. 495.
23. *The Newmarket-Aurora Era*, March 14, 1979.
24. *ibid.*
25. *ibid.*
26. *The Newmarket-Aurora Era*, March 21, 1979.
27. *The Newmarket-Aurora Era*, March 14, 1979.



# Contributors

**Joe Bucovetsky**, a graduate in architecture from the University of Toronto, has worked for the Historical Planning and Research Branch of the Ministry of Culture and Recreation on several research and planning projects. His *Townsend Traces* report was published in 1977, and his work on a survey of Dundas is presented here. Joe left the Branch to pursue his architectural ambitions — the trail has led from Toronto to Edmonton and thence to Philadelphia where he is completing the Master's programme in architecture and planning at the University of Pennsylvania.

**Paul Campbell** is an inveterate student of the history of technology, with a special interest and expertise in Canadian mining and milling. After his long sequester at the University of Toronto, he came to the Ministry of Natural Resources as a mining expert to work on Gold Rock and then to the Ministry of Culture and Recreation as a historian and fieldworker on the West Patricia Land Use Study's heritage project in northwestern Ontario. He and his co-authors expect their prolix West Patricia work to be published early in 1982. After that, Paul figures he'll be a machinist.

**David J. Cuming** is currently a heritage planner with the Ministry of Culture and Recreation. Born in England and raised on a diet of Regency architecture in Cheltenham Spa, David gained a B.Sc. (Honours) in Town Planning Studies and a Diploma in Town Planning from the University of Wales at Cardiff — the industrial heartland of Wales. His varied work experience has included both long and short range planning, in England and Ontario, in private planning practice and in local municipal authorities. Forsaking the thrill of municipal planning he joined the relatively salubrious atmosphere of the Ministry of Culture and Recreation in 1978. David's credentials include membership in the Canadian Institute of Planners and the Royal Town Planning Institute.

**Mark Fram**, a heritage planner with the Ministry of Culture and Recreation since 1977, has produced one major publication, *Ontario Hydro, Ontario Heritage*, for the Ministry, a host of minor bureaucratic works which will mercifully never see the light of day, and conference presentations on architectural conservation and planning for several learned societies. He holds a B.Arch. degree, and has a tentative grip on a forthcoming M.A., both at the University of Toronto. His working experience includes stints in private architectural practice and several years' work on urban design and central area planning in Toronto. Confessing an inordinate fondness for the *commonplace* heritage of the countryside (about which he'd known very little four years ago), Mark grumps a lot at the so-called "improvements" that dim its delights.



Ed McKenna is an historian with undergraduate and graduate degrees from Carleton University who began his work in heritage planning with the Ministry of Natural Resources in 1974. Most at home in eastern Ontario, he produced a great mass of unpublished work for the Ministry of Culture and Recreation on provincial parks, especially Algonquin Park, and on the CORTS historical planning project, published earlier this year. His enchantment with matters eastern and rural and his love of the theatre conspired to pull him to Nova Scotia in 1979, where he continues to work in a rural theatre co-operative — in *eastern* Nova Scotia, mind you.

Marilyn Miller hails from Kingston, Ontario, where she completed her schooling with an M.A. in History from Queen's University in 1975. She was pleasantly surprised when the Historical Planning and Research Branch of the Ministry of Culture and Recreation offered her a research contract upon graduation. She has been working for the Branch ever since, completing a study of small scale mining, and a study of colonization road settlement in Eastern Ontario. This last report was published in 1978 as *Straight Lines in Curved Space*. Marilyn is now working as a heritage planner with the Branch and despite the day to day verities of comments and reviews, she still has the capacity to be pleasantly surprised.

John Weiler, heritage planning supervisor in the Ministry of Culture and Recreation since 1975, worked initially with the Ministry of Natural Resources in provincial parks planning. He holds an Hon. B.A. in Modern History from the University of Toronto, an M.A. in History from Carleton University, and a Diploma in Conservation Studies from the Institute of Advanced Architectural Studies, University of York, England. His working life, besides the administrative travails, focusses on developing heritage conservation policies for provincial government programmes concerning public works, municipal planning, housing and community renewal, parks and recreation, and tourism. He has authored a few modest publications on heritage resources and planning. John's special love after his wife, dog, and cat, is industrial archaeology.

# Acknowledgements and sources

## Acknowledgements

The editors are especially indebted to all those, too numerous to name, who provided advice and information to the authors of this book. We wish to give special thanks to the people who helped put together the final product. Bette Quenneville and Dorothy Mackenzie patiently typed the several unavoidable preparatory drafts, Judith Marion and Joan Affleck translated authors' scribbles into proper cartography, and Darlean McAllister skilfully set the text in type. Mark Fram designed the book, with Judith Marion's help, and Martha Weaver put all its pieces together.

## Illustration sources

### Cover and title pages

The historical photograph in its several guises records the reading of the proclamation announcing Confederation in Kingston's Market Square, July 1, 1867 (Queen's University Archives). The more recent views of Market Square are by Mark Fram, with the assistance of Elizabeth Addison and the kind co-operation of Denise Drury.

### Introduction

Ontario Hydro: 3.  
Judith Marion: 2, 56.  
John Weiler: 4, 12.  
Paul Campbell: 9.  
Mark Fram: 7, 10, 11.  
Joe Bucovetsky: 8.

### Planning and conservation

Heritage Administration Branch, MCR: 2a, 4, 5, 18, 21, 25, 27, 30, 32.  
Historical Planning and Research Branch, MCR: 2c, 10, 15, 28, 33.  
Ontario Heritage Foundation: 23.  
National Museums of Canada: 20.  
Ministry of Industry and Tourism: 19.  
Carol Priamo: 2b, 6, 8, 11, 12, 14, 22, 24, 26, 29, 31, 35, 36 (left).  
John Weiler: 9, 13, 34, 36, (right).  
John Blumenson: 3, 7.  
Paddy Reid: 16.  
Donald McLeod: 17.

### The customary shores

Public Archives of Canada: 10(C-17306), 11(PA-84504), 12(PA-30645), 14(C-10956), 22(C-79399), 24(C-2755), 30(C-14453), 34(C-22454), 39(C-27550), 40(C-27564), 46(PA-86339), 53(C-37498), 61(C-32927), 65(PA-46254), 68(C-35381), 71(PA-62177), 73(C-36169), 75(C-27220), 79(PA-26976), 81(C-30539), 82(C-27196), 83(C-21222).  
*CORTS Historical Planning and Research Study*: 3, 4, 5, 6, 33, 78.  
Mark Fram: 1, 2, 7, 8, 9, 13, 15, 16, 18, 19, 20, 21, 23, 25, 26, 27, 28, 29, 31, 32, 35, 36, 37, 38, 41, 42, 43, 44, 45, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 60, 62, 63, 64, 66, 67, 69, 70, 72, 74, 76, 77, 80, 84, 85.  
Peter Carruthers: 17.

### **The Valley Town**

The maps and original drawings are by Joe Bucovetsky and

Judith Marion.

Archives of Ontario: 1, 2, 6, 8, 11, 13, 15, 18, 21, 25, 28, 44, 52, 54, 55, 56, 57, 63, 64, 71, 72, 73, 76, 77, 78, 79, 80, 90, 97, 107, 108, 109, 110, 112, 113, 114, 115, 116, 118, 119, 120.

Public Archives of Canada: 16.

Joe Bucovetsky: 65, 66, 67, 68, 69, 70, 81, 86, 87, 91, 92, 96.

Marilyn Miller: 58, 95.

J. B. & M. M.: 26, 27, 29, 30, 31, 88, 89, 93, 94.

Dundas Heritage Association: 22, 43, 61, 75, 99.

### **Mines and mills at Gold Rock**

The maps are by Judith Marion and Joan Affleck.

Ministry of Natural Resources: 1.

Paul Campbell: 2, 3, 4, 5, 6, 7, 9, 11, 12, 14, 15, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45, a, c, d, e, f, g, h.

David Cuming: 8, 10, 13, 19, 20, 35, 36, b.

### **Shifting sands**

The maps are by Judith Marion

Collection of Mrs. Violet Gray: 3, 5, 15, 20.

Mark Fram: 1, 2, 4, 6, 7, 14, 21, 22, 23.

Judith Marion: 13, 18, 19.

### **Niagara's Falls, Toronto's power**

The original drawings are by Mark Fram.

Ontario Hydro: 8, 13, 16, 18, 20, 22, 23, 24, 26, 29, 31, 32, 43, 46, 50, 51, 57, 58, 61, 62.

Ministry of Industry and Tourism: 10, 17, 60.

City of Toronto Archives: 42.

Public Archives of Canada: 4(PA-61167), 12(PA-29237), 19(RD-517), 52(PA-30335).

Mark Fram: 1, 2, 3, 5, 6, 7, 9, 11, 14, 15, 21, 34, 35, 36, 37, 38, 40, 41, 44, 45, 47, 48, 49, 53, 54, 55, 56.

*Engineering News*, LIV(1906): 25, 27, 28, 30, 33, 39.

Twentieth Century-Fox: 59.

### **The forgotten Newmarket Bridge**

*The Engineering Journal* (1937): 9, 12.

*Canadian Cement and Concrete Review* (1909): 10.

*The Canadian Engineer* (1910): 11.

Marilyn Miller: 1, 2, 3, 13.

John Weiler: 14.

Watson Sweezie: 5, 6.





## HERITAGE PLANNING STUDY series

General editor: David Skene Melvin

1. Greenwald, Michelle (*et al.*). *The Welland Canals; historical resource analysis and preservation alternatives*. 2d (rev.). ed. repr. 1979. xi, 175p., illus., maps. ISBN 0-7743-3238-7 Out-of-print.
2. Bucovetsky, Joseph, and Greenwald, Michelle. *Townsend Traces; heritage conservation in Townsend New Town*. 1977. iv, 264p., illus., maps. ISBN 0-7743-2888-6 Out-of-print.
3. Miller, Marilyn G. *Straight lines in curved space; colonization roads in Eastern Ontario*. With the assistance of Joe Bucovetsky and Elizabeth Sisam. 1978. 0-7743-2978-5 Out-of-print.
4. Fram, Mark. *Ontario Hydro, Ontario heritage; a study of strategies for the conservation of the heritage of Ontario Hydro*. 1980. viii, 155p., illus. ISBN 0-7743-4094-0 \$10.00.
5. *Three heritage studies; on the history of the HBC Michipicoten post and on the archaeology of the North Pickering area*. Ed. by David Skene Melvin. Pt I: *Michipicoten; Hudson's Bay Company post 1821-1904*. By John M. Weiler./Pt II: *An archaeological survey for the North Pickering Project*. By Victor A. Konrad and William A. Ross./Pt. III: *The Draper Site; white pine succession on an abandoned Late Prehistoric Iroquoian maize field*. By Irene Bowman. 1980. vi, 139p., illus., maps. (Archaeological Research Report 14) ISBN 0-7743-4464-4 \$4.00.
6. *Heritage studies on the Rideau-Quinte-Trent-Severn Waterway*. By the staff of the Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation. 1981. xiv, 342p., illus., maps. ISBN 0-7743-5513-1 \$10.00.
7. *Continuity with change; planning for the conservation of Ontario's man-made heritage*. Ed. by Mark Fram and John Weiler. 1981. xx, 342p., illus., maps. ISBN 0-7743-6304-5. \$10.00.











